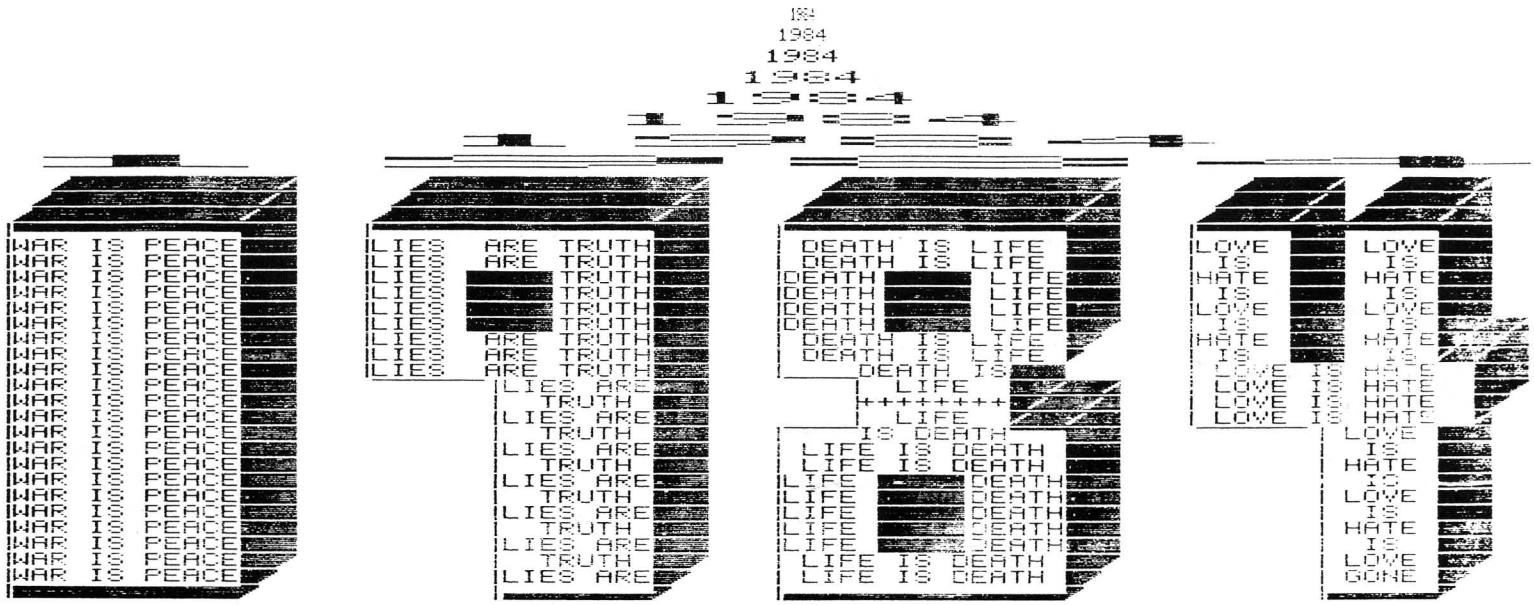
ISSUE 20 1984

The MIDNITE SOFTWARE GAZETTE

Includes The PAPER

A BI-MONTHLY JOURNAL OF NOTES, REVIEWS AND ARTICLES



By Bob Stowe
written in BASIC for the 8023

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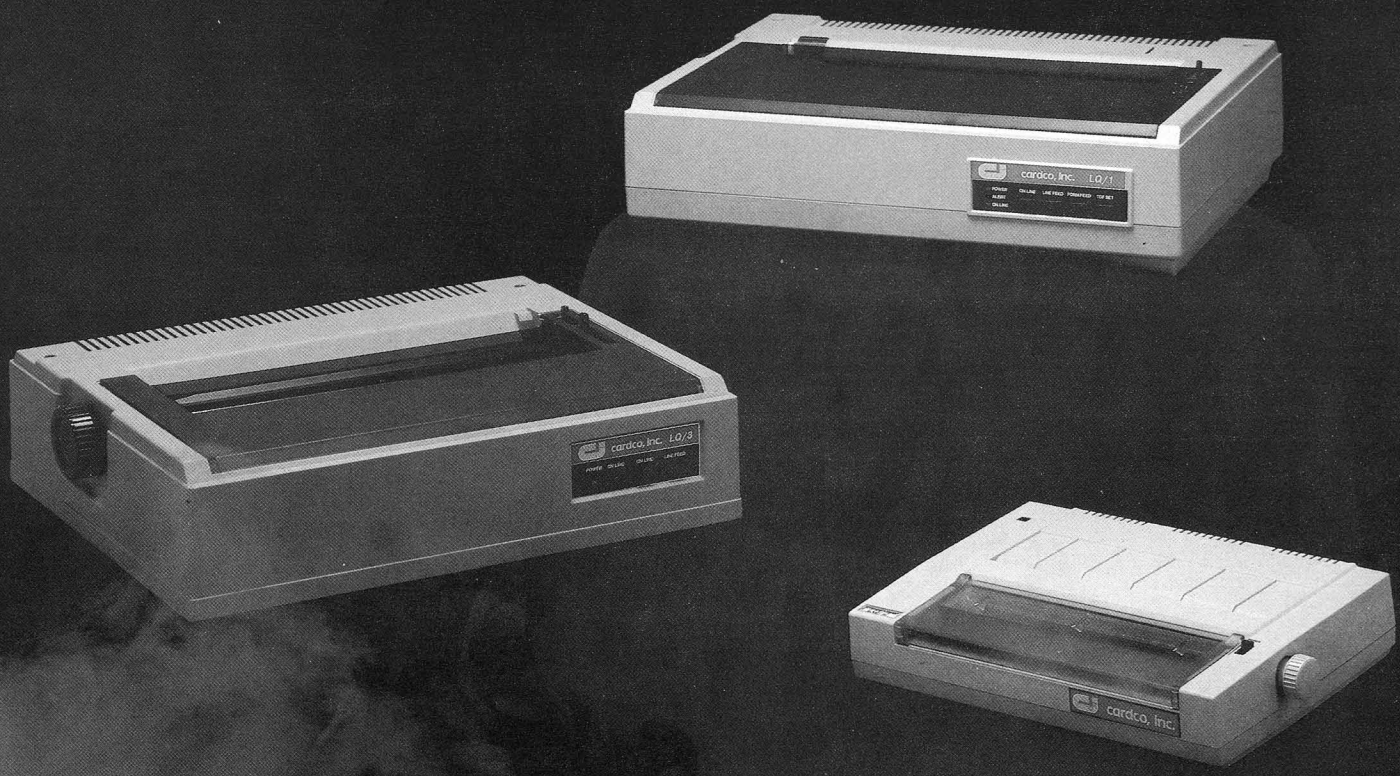

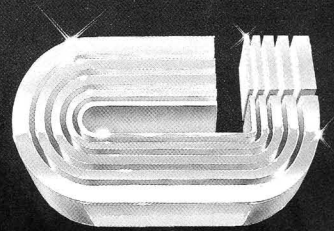

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THE MIDNITE XPRESS NOTES

Midnite Meanderings

by Jim Strasma

COMMODORE MAGAZINES: ONE DOWN, ??? TO GO

Remember the good old days, back when no one covered Commodore products? Major magazines avoided the PET like the plague. Times change. Now we have too many Commodore-only magazines, but not quite as many as last month. JO reports Commander is no longer - bought out by Ziff Davis and folded into Creative Computing. Ahoy is claiming wonderful success, but I wonder - it has more in common with Commander than I would expect of a magazine that can make it in today's market. Naturally I'm biased, now that I am involved with RUN, which seems to be doing so well that the major problem is keeping enough copies on the shelves. Its RERUN, and Compute's Gazette's Disk Edition should be a great boon to readers. I haven't been able to bear the thought of typing in listings for several years, although it was a great way to learn debugging...

LATE FLASH: Everyone seems to be accusing everyone else of going under this week. JO reports seeing a note on Compuserve last night, saying RUN was in financial trouble. I have some very good reasons to doubt that rumor, but checked it with RUN's sales manager anyway, when he called today. After he stopped laughing, he commented that RUN is in the best financial shape of any of the CW:Peterborough magazines, and suggested that rumor might be an offshoot of one he'd heard all over the west coast that Compute! was in real trouble. In case anyone asks, Midnite isn't going under either, thanks to our loyal subscribers, and a switch back to a known reliable mail list. We are, however, switching to a professional mailing service, so JO can concentrate on entering subscriptions instead of stuffing envelopes.

THE FIRST MASS MARKET WRITER

Did anyone see Fred D'Ignazio's column in the June Compute? Quoth he, the IBM PCjr is "the first mass-market computer." Gosh, what an unpleasant surprise for those who bought VICs, 64's, Timex 1000's, TI-99's, and Atari 400's; they only thought they were buying mass market computers, fooled by the fact that they were among over a million each to buy them at K-Mart or Child World. D'Ignazio goes on to assert that IBM's intentionally gelded toy will be the salvation of the home computer market, as though it would be a good thing if a machine so lovingly busted by its maker were a success. The sad thing is that the blasted thing may succeed. So many people blew so much money dreaming up ways to make money off it before even seeing it that few can afford to admit how few clothes the Emperor is wearing.

On the other hand, Fred's other comments have some merit, especially his suggestion in a later issue that computers need to become simpler to use before they will truly be appliances in the same sense as washing machines, citing as example that no one has to subscribe to Wash! magazine, or attend Whirlpool user groups to learn how to clean clothes.

LESSONS FROM ADAM OSBORNE

One of the most interesting things I learned from Adam Osborne's description of the rise and fall of Osborne Computers in his forthcoming book was that when the Osborne I was first sold, no one there really knew how to make it work properly. All sorts of hardware problems cropped up--enough that Osborne says the reason no switch was made to a 9" screen when the need for one was obvious was because he didn't think they were competent to make the change. None of this was public knowledge then. Why bring it up now? As proof that the old rule is still true. Never buy the first release of a new computer if you can possibly avoid it. Almost without exception, the first units sold are flawed in ways that later versions aren't.

Answer (see #17): CURVE-FITTING FOR THE 64

A: Re: your request for curve-fitting for the 64 (pg. 3, issue 17), I don't know first-hand if it works, but Folklife Terminal Club, Box 2222, Mt. Vernon, NY 10551, provides a public-domain program **Best-Fit** on its disk "DFC." I had the info, but just recently ordered my first diskette from them. From what I discern, it may be a "PET" program, requiring an emulator program to run on the 64. -Dave Agee, Dayton OH

A: See also Language Notes in issue #19, p.9, for Curve fitting on the SuperPET. -ED

For sale: 64 BUSINESS SYSTEM

If you know of anyone looking for a 64 with 1541 disk drive, 1525 printer and a wealth of business programs, please put them in touch. -Keith Klarin, 19 Newman Sprints Rd., Shrewsbury NJ 07701 (201/741-0040)

Problem: ELITE USING EASY SCRIPT?

Q: I have the following hardware: Commodore 64 computer, Commodore 1541 disk drive, Okidata M92 printer and Tymac's The Connection interface. How do I print an entire letter in elite using **Easy Script?** As soon as the line wraps to the next line, the printer is immediately back in pica. -Robert R. Hayward, Stone Mountain GA

A: Sorry. We always recommend testing the printer interface and wordprocessor TOGETHER before purchase for just this reason. That **Easy Script** doesn't list the Okidata as a printer option should be a clue that something may not work properly unless tested. Precision Software (England) or Okidata or Microware Distributing may be able to help further, but I doubt it. Brother Timothy Brady (of Mt. St. Michael's Academy, 4300 Murdock Av., Bronx NY 10466) reviews this same combination in the Reviews section. Unless another reader has a suggestion, learn to like pica, or use a word processor that supports the Okidata and Connection interface. -JS

Problem: CARD/? INTERFACE WITH CERTAIN PROGRAMS

Q: I am having some problems with the Card/? A interface for the Commodore 64 Computer. I have 3 Commodore programs (**Easy Script, Easy Mail,** & **Easy Finance**) which do not operate properly. All three programs work well, except they always leave off the last line of print. On the **Easy Script** word processor, I have to leave a blank line at the bottom followed by a return to make sure the last line of print is sent to the printer (Gemini 15). On **Easy Finance,** the last line is not printed on any of the programs until I enter new values and then the last line appears as the first line of the new output format. I am also not able to use the Bar Graph function of the **Easy Finance** program. My computer consists of a Commodore 64 computer, 1541 disk drive, Cardco/?-A interface, and a Star Micronics Gemini 15 printer. -William Metcalf, Peoria IL

A: Set the Gemini to print after each line, not when the buffer fills. That cured a similar problem on my Prowriter. To do graphics such as bar graphs on the Gemini, upgrade your Card/?-A to a Card/?+G. Cardco's upgrade policy may cut the cost. -JS

Tax Warning: ON COMPUTERS IN HOME OFFICES

Under a proposed Federal law, a home computer must be required for employment, and used 50% of the time for business to be eligible for an investment tax credit and accelerated depreciation if purchased after June 18, 1984. (Infoworld 7/16/84, p. 13)

Tip: CORRECTED EASY SCRIPT PRINTER HOOKUP

The **Easy Script** word processing manual gives an incomplete pin-out for using the Smith-Corona TP-1 serial daisy wheel printer via the Commodore VIC-1011A RS-232 Serial Interface. The pin-out stated on page C-3, is:

INTERFACE		TP-1 CONNECTOR
PIN 2	TO	PIN 3
PIN 3	TO	PIN 2
PIN 5	TO	PIN 20 (OR PIN 4)
PINS 4&6 together		

The printer will not function when wired as shown! Connect 4,6 & 8 together.

The manual for **Easy Script** also states incorrectly that the COMMAND REGISTER be given the value of 17. The correct value, for EVEN PARITY, is 113. -Vernon Whorl

Use: VICS IN AN AIRPORT

If you have had the opportunity to see the people mover train system and escalator system at the Atlanta International Airport, you would be very impressed. It all runs automatically by computer. What impressed me even more was to discover what Westinghouse Electric uses to monitor the power supply and perform some other functions on this system...a VIC 20.... -Jerry Carter (in CCC of Toledo Newsletter)

Wanted: FASTER PRINTING DATA BASE THAN FLEX-FILE?

Q: I have been using **Flex File** to manage a mailing list business for a couple of years. For the past four months I have been trying to find a better program to do this. My particular beefs with **Flex File** are its slow printing speed for both labels and reports, a rather inflexible report writer, and lack of global update. I have [called many] companies listed in the current issue of the Commodore Software Encyclopedia, as well as magazines. Many businesses have simply disappeared; others couldn't be bothered with answering my questions. Still others flat-out refuse to demonstrate their program! If you can recommend a good data-base program for the CBM 8032/8050 system, I would be very much appreciative. -Steve Langerman

A: Take a good look at **Superoffice** from Precision Software (reviewed in M19.) Other good programs include **The Manager** from CMD and **The Consultant** (formerly **Delphi's Oracle**) from Batteries Included. We're considering all of these. -JS

Wanted: HOSPITAL WARD WORK SCHEDULE?

Q: I'd like to find a 64 program (commercial, public-domain, anything) to develop a monthly, multishift, multi-worker, work schedule for a hospital ward. If nothing will work "off-the-shelf," do you know of anything close which I could alter? Thanks for your help. -Dave Agee, 408 Aberdeen Av., Dayton OH 45419

A: Dr. Clarice Baker of Kamloops, B.C. CANADA gave me a copy of her public domain program that schedules 6 gynecologist/obstetricians for around the clock "on call" hospital duty. Any other suggestions, readers? -ES

Wanted: KENNEL PROGRAM FOR A CATTERY?

Q: My wife and I run a cattery and have been looking for a program to help us run our business. We have a 64 with a 1541 disk drive and a printer. (We are new to computers.) Maybe a kennel program is available which I could adopt. -Richard Kopp, 3657 Farm Ranch Rd., Bethpage NY 11714

A: No, we don't know of specific applications yet. How about it, readers? -ES

Wanted: STOCK MARKET SOFTWARE?

Q: I am interested in software for stock market analysis for the Commodore 64. Any recommendations? -Lynn Harner, 2011 Central Av., Doge City KS 67801

A: **Stock** from Custom Software Design was reviewed in issue #16. Any other suggestions, readers? -ES

FREE MEMORY LOCATIONS FOR THE 64

HEX	DECIMAL	NOTES	FREE BYTES
$FB - $FE	251-254	FREE ZERO PAGE	4
$02A7-402FF	679-767	UNUSED	89
$0313	787	UNUSED	1
$0334-$033B	820-827	UNUSED	8
$033C-$03FB	828-1019	TAPE I/O BUFFER	192
$03FC-$03FF	1020-1023	UNUSED	4
$0800-$9FFF	2048-40959	BASIC STORAGE*	38912
$C000-$CFFF	49152-53427	MACHINE CODE "SACRED RAM"	4276
$D500-$D7FF	54528-55295	RESERVED FOR FUTURE I/O	768
$DE00-$DFFF	56832-57343	RESERVED FOR FUTURE I/O	512

*Use only if you are not in BASIC (or if you ARE using BASIC, set locations 43-46 [$2B-$2e] accordingly.) Also see your Programmer's Reference Guide. -Compiled by James Linscheid from The Master Memory Map for the Commodore 64 (in Northwest User's Guide)

Hint: REPEATABLE KEY ON THE 64

A recent Fox Valley 64 Users Group newsletter reminded us of a useful 64 trick: To repeat all keys, type **POKE 650,128**

ON KEYBOARD LOCKUP

There is a way to regain control of the old ROM Commodore 64 after you experience the infamous keyboard lockup upon deleting a character on the bottom line of the screen (a bug). All you must do is press the SHIFT key and the "2","3" keys. This will start the Datasette going (assuming you have one). Then hit the RUN/STOP key and you have your computer back! -Scott Jensen

[NOTE: In Midnite #11, Ken Penny described another fix: type 351000 and hit RETURN, and the system will do a restore. -ED]

ON USING CARTRIDGES PROPERLY

Q: When I plug a Commodore cartridge in the cartridge slot of my 64 after the power is on, I lose BASIC. I was hoping to read the cartridge source code with a machine code reader such as MLX. Using a monitor (**Supermon**) also proved unsuccessful. I don't see how an expansion motherboard (**Cardco CB-5**) will solve this, as you imply in RUN. What is energized by the Commodore cartridges to disable BASIC, and can this be counteracted? -Henry Metz, Bronx NY

A: You're lucky BASIC is all you lost when you plugged in that way! Many VIC owners have lost their whole system by plugging in cartridges with the power on. What's getting you isn't something magic in the cartridges, but rather their very nature. To give maximum flexibility, the cartridge port is connected to nearly all the important wires that run the 64. When you plug something in with power on, you disrupt the signals on all these wires, with an effect similar to having a kid in the back seat scream in your ear and drop a pet snake in your lap as you pass a truck on a crowded highway. Don't do it!

When the computer is reset, it checks the cartridge port; if it finds certain characters in the first few locations of cartridge memory, the computer turns control over to the cartridge instead of BASIC. If you have a valid reason to study a cartridge, use something like the **CB-5** to keep the cartridge from auto-starting, as suggested before. -JS

ORDER FOR TURNING ON YOUR COMPUTER SYSTEM

Fred Jones has uncovered a corrected order (than what is stated in the 1541 disk drive manual) for turning on the different parts of your computer system. According to the latest Commodore update, you should turn them on in this order:

computer, disk drive, second disk drive, printer.

Of course, the easiest way (if it works for you) is to connect all peripherals to one outlet switch box, and turn them all on simultaneously. The box should contain at least 4 outlets, and you may need one with 8 outlets before you're done adding peripherals! They cost $10 and up. -ES

Wanted: BEST SYSTEM USING CP/M

Q: We desire to purchase the best system for a given price that can use CP/M software and languages as well as those for the 64. Specifically, we would like your recommendations in 3 price ranges ($1500, $2000 and $2500) for obtaining: two (or dual) high speed, high density disk drives; a printer to do semi-professional wordprocessing (a high quality dot matrix or good daisywheel); a color graphics plotter; a high resolution color monitor; an 80 column board; a high speed interface bus, and a compatible word processing program. What is the maximum amount a new buyer should spend on such a 64 system before considering a more expandable system, such as the Apple IIe or the IBM PC? -Douglas Christopherson

A: You'll be lucky to get all that for $2,500 in any system; forget about less. Also decide which of the above you can give up. For instance, you can't combine 80 columns and color unless you're willing to add another $1000-2000 to the price (an IBM PC system). Don't buy the 64 to get CP/M. If you really want 80 columns, I'd also look at the 8032. -JS

Commodore Notes

by Jim Strasma

COMMODORE'S NEW PRODUCTS

Commodore is being very quiet this month. However, you may want to know that the 16, first shown in its present form at CES is a "go". Apparently enough have been sold to mass marketers that it may be a higher priority than the Plus/4, though that will apparently be a successful machine as well. On reflection, the 16 seems better than I first thought--it is better than the VIC in every way but one, and costs about the same. Only those who want to use a MODEM will be left out, and the Plus/4 will reportedly include an ACIA chip, making it a splendid machine for MODEM use. I'll still prefer the Plus/4, but the 16 will be almost completely compatible with it, unlike the VIC in relation to the 64. Both will answer one recent criticism of the 64 by Tandy's Steve Leininger in Infoworld, where he says "What Commodore needs is a 64 with a real Basic that makes easy use of its sound and video chip." However, they obviously don't answer his other criticism. "Continued growth and support of a product line are important. The software base for our Color Computer goes up from month to month, which makes you wonder about the Commodore Plus/4 not being compatible with the Commodore 64."

MORE CENTRALIZATION

In other Commodore news, General Alexander Haig has been added to its board of directors, and user groups report the direct exchange centers in Dallas TX and Santa Clara CA have been closed, leaving West Chester PA and Schaumburg IL (312/397-0075) as the only places to send products to be exchanged. Oh yes, Computer & Software News reports Commodore is being prepped for sale to AT&T, RCA, ITT or Thyssen Bornemisza (look that one up, trivia buffs!) This runs counter to what Commodore's Chairman, Irving Gould told me last month, but it would make some sense with Commodore's earnings high and its stock prices low.

Competitors Notes

by Jim Strasma

HEADS UP, ATARI - HERE COMES UNCLE JACK

The big news from the competition this time is, of course, Kindly Uncle Jack's recent purchase of Atari. Anyone who previously doubted Jack Tramiel's bargaining abilities, please note that he bought Atari with nothing but an I.O.U.; however, from one account, Warner (the previous owners) may have approached Tramiel after being unable to reach a deal with Phillips (the Dutch conglomerate). Former president Morgan was apparently not informed of the negotiations until they were well along, and has gone on vacation until the dust settles. Presumably he and anyone else under Warner contract that Tramiel doesn't keep will now work directly for Warner.

Keith Peterson reports that Atari employees were nervous about Tramiel's arrival, and found their worst fears realized on his first day at work. Though news reports differ on the actual numbers laid off, Atarisoft appears to have lost all but one of its hundred plus employees, and few areas went untouched. Warner reportedly agreed to cover the severance pay costs of anyone laid off in the first few days after the purchase, and Kindly Uncle Jack seems to have taken full advantage of that offer. One would suppose he will now take his time deciding which employees he really wants back, and then rehire only those, possibly offering lower wages than before. Apple Computers has responded by lifting a hiring freeze long enough to look over the resumes of those leaving Atari.

SPECULATION NUMBER ONE

What will the new Atari do? Hard to tell--Tramiel never has been predictable. Conventional wisdom among journalists seems to be that he's out for vengeance against Commodore. Some pundits now say the real reason Tramiel split from Commodore last winter is that he wanted to bring his sons into top management, and wasn't permitted to. True or not, they have top positions in Atari now, which may give Atari an advantage in far Eastern markets where a deal cut with the owner's son is considered better than one made with a "mere" corporate employee.

If the vengeance theory is true, Tramiel will presumably eliminate the weaknesses he saw in Atari from Commodore, and exploit any weaknesses in Commodore he noticed while there. On the other hand, Keith Peterson isn't sure vengeance is the goal, suggesting that even the sufferings of TI were more due to their own aggression than any ill feelings on Tramiel's part. (You want to raise my bet when I'm holding a Royal Flush? Sure...)

SPECULATION NUMBER TWO

An alternative theory is that the new Atari will go after Apple instead of Commodore, possibly with a Macintosh workalike to be sold by Christmas. That would be an interesting machine, and Apple is a much plumper target than Commodore, because there is far more fat in their pricing. (In case you were wondering why no one ever gripes about cheap imitation 64's, it's because no one can make and sell them for less than Commodore does.) Where would Tramiel get a Mac with Atari's R. & D. department gone? He could buy it, we are told, either from an independent designer in the States, or from Far Eastern sources.

Naturally, if Tramiel did do a McClone, Apple would sue him as it has others, but by all accounts Mr. Tramiel enjoys being in court and does well there. Apple would also have to take a number. One fairly sure consequence of the new Atari is that Tramiel may no longer honor contracts the old Atari signed with software houses. Since some have their corporate futures tied up in those contracts, we can expect to see more court action.

It appears that Atari's existing line of computers will be abandoned, and current inventories sold off cheaply for Christmas. This could put a dent in Commodore's short-range sales plans for the 16 and Plus 4, but can't last long. The video games, on the other hand, may continue as is. Atari still dominates what's left of that market.

AND IN APPLELAND

One interesting question about the McClone theory is whether the Mac is selling well enough to rate being copied. Apple seems quite pleased with sales, and is running the factory at full speed, but it remains to be seen whether ordinary people are paying the asking retail price for the machine. None have been sold yet in Lincoln, and at least some of the people at the LC^4 camp last week felt that only the $800 dealer and $1,000 student versions of the Mac are actually selling in volume, even though some dealers on the coast report being sold out. At least one Mac magazine may already have gone under, which suggests all is not entirely well in Apple land.

Another Apple rumor suggests the][c isn't selling as well as expected either--one Apple][e assembly line was shut down in favor of the][c, and now the][e is in short supply and the][c easily available. Once again, the culprit may be a sleazy keyboard. The][c keyboard, despite its alternate layout switch, is little better than the much-maligned PC jr's. On the other hand, the slump could just be due to a shortage of the new tiny monitors, which are proving popular, and other accessories.

AND FROM THE CORPORATE GIANTS

Current rumors suggest that besides changing keyboards and cutting prices by $270, IBM will up jr's standard memory to 256K, so it can use more PC programs (a second disk drive would also help!). PC prices are also down about 20%, anticipating new offerings from AT&T and IBM, and reflecting increased inventories as production catches up with demand on this aging design. The primary effect is to force clone makers into matching the price cuts.

AT&T has apparently announced its PC clone, a made-in-Italy Corona. When Keith Peterson showed off his Corona, I have to admit being impressed, not so much with its 512K RAM and built-in 10M hard disk as with its excellent software, **Multimate** and **Lotus 123.** A new addition to the AT&T version may be an internal phone and a networking scheme, perhaps even the micro equivalent of a "hold" button. If AT&T sells it as cheaply as suggested, it should be quite successful, and put still more pressure on the smaller clone makers.

IBM and AT&T have also just had research successes. IBM has cooked up a megabit memory chip, and AT&T's Bell Labs has invented a new ultra-small transistor called the 1DT.

NEW MEMBERS OF THE CHAPTER 11 CLUB

Franklin, on the other hand, is now in Chapter 11 bankruptcy, and Eagle dangling over the edge. Sirius software is also in Chapter 11, and both Visicorp and Software Arts are feeling pain over their war. Coleco says it's doing fine, but recently borrowed more money, and a fellow who'd planned to start a Coleco magazine has decided not to after all. Apparently times are getting very hard for many micro firms, as shakeouts continue. An industry-wide shortage of "glue" (little chips that connect big chips in computers) is expected to abate soon as many of those with chip orders go under. Meanwhile, 90 day payables and receivables may now be the norm, suggesting all is not well in Silicon Valley.

NEW TECHNOLOGIES

Two new technologies may soon have a big effect on home computers. First, 25x80 column **LCD flat screen displays** are beginning to appear, and will soon be widespread. Commodore, which makes over half the LCD watch displays, may be close to a cost breakthrough, a traditional barrier to replacing CRTs with LCDs. The other new technology is **optical disks.** John Dvorak reports in Infoworld that IBM has ordered 1,500,000 digital audio disk players, presumably to use as huge databases. This makes a great deal of sense. Why, for example, buy a product which takes two dozen floppy diskettes to hold the full text of the Bible, when the whole thing, plus reference tools, would fit easily on one optical disk? The same could be said of the complete works of Shakespeare, a historical archive of stock prices, or the Encyclopedia Brittanica. There is, of course, still the question of quick access to all that info...

Finally, Hewlett-Packard plans to offer the **Canon Laser printer** for $3,495, with type font cartridges going for $220. Sadly, its memory will be inadequate to support a full page of graphics, but two competing companies can, with competing models for about $10,000. Properly interfaced, Commodore owners might be able to use them. If they are as good as Canon's matching PC-20 copier, each will be a breakthrough machine.

Copyright Notes

COPYING DISKETTES & THE GOLDEN GOOSE

Here is a copy of a letter we received from Sarah Knutti to the Board of Directors and officers of a Commodore Users Group:

Dear Friends:

I was taken unaware (because I have not been able to attend recent meetings) by the proposal at the 4/28 meeting to provide copies of Compute's Gazette's **Speed Script** to members (with a photocopy of the instructions from the January issue) for a "typist's" fee. I was, therefore, glad the matter was tabled, and am presenting my views here:

First, the practical side: The Gazette has barely launched its disk subscription program, reversing an earlier decision, without employing anti-copying devices on the diskettes. At the same time, it has made clear that it hopes people will subscribe rather than copy. If we DO copy, few of our members will subscribe to the disk service. If the disk subscription services does not get and hold subscribers, it obviously cannot support itself financially, and the "Golden Goose" will be gone. (Right now, for a paltry $6.66, we are getting not only **Speedscript**, but also several other good programs.) If the disk program does go, we will be back to typing, and that - as most of us know - is work!

Further, having no copy protection not only permits the legitimate backup we need, but also encourages programmers to experiment and modify - in the best tradition of users' groups. It also may encourage members to write programs, and prevent our meetings from over-emphasis on getting items "on the cheap." Why not, as an alternative, approach the Gazette people for some group arrangement so that members would receive a discount -- perhaps paying $5 per diskette?

Second, the ethical side: Is it really right for us to copy, for anyone who has not subscribed to the diskette service, from a diskette which bears "Entire contents copyright (C) 1984 by Compute! Publications, Inc.?"

Third, the legal side: As I understand it, Compute will not prosecute individuals or User's Groups for breaching their copyright, but that does not mean that they are not entitled to do so. Doesn't that leave those who do as sort of "un-indicted co-conspirators?" Is that what we want to be ? J'y suis, et J'y reste.

BOOTLEG SOFTWARE FOR SALE?

Bootleg copies of programs are openly being advertised and sold. We have found evidence that some group members may be indirectly providing these people with some of this copied software. This sort of involvement, even as indirect and limited as it may be, can only hurt ALL the users groups in the area. One justification given by a person answering one phone number given in an Oregonian classified ad was that if users groups could copy software, so could he. He failed to see the obvious distinction between copying for personal use and copying with the intent to sell the software for a personal profit. The most unsettling aspect is that it really typifies the prevalent image users groups currently have. Software exchange has grown from a secondary aspect of some users groups to being the sole purpose for their existence. If users groups are to remain a viable source of information and education for the computer user, leaders and members need to give some serious thought to the image they are creating within the community.

If you as a free-thinking and responsible adult choose to duplicate software for your own use, that is a choice that you knowingly and willingly make. When a users group makes that decision though, there are many ramifications. Many user group members are not adults. Do we as group leaders have the right to make such decisions for those underage members? Do we assume that all parents want their children who attend the meetings to be educated in that manner? Many people have said that if it weren't for the copying of software, they would have no interest in attending group meetings. If that is true, I fear for the future of the groups. Leaders must be held responsible for establishing a positive direction, and members must be willing to contribute to the organization to which they

belong. The member only interested in what he can copy at a meeting is one the group could just as well do without. Whether it is right or wrong to copy software is not the issue at hand. We must define what we see the role of the users group in the future. -Randy Chase (in Northwest Users Guide)

AND FROM A EUROPEAN PERSPECTIVE...

Hello America. My name is Pierre Simon, and I reside in a suburb of Paris, France. I am a computer analyzer... and lived in New York City while I did a thesis on business law and computers. Bob [Shannon of Electric Magazine] has asked me to explain to you Americans just what the European viewpoint is on computer piracy. I will try to do this without hurting your feelings, but I must say that Americans tend to over-analyze their situations. For instance, I have read no less than 1ØØ articles on the pros and cons of your copyright laws, who is breaking them, and who is not. Instead of solving your problems, you seem to be splitting into two inseparable camps. There are those of you who feel that copying protected software is okay. This group seems to be in the majority. Interestingly enough, most are stretchers of the truth; they pretend not to be pirateers until enough of their friends admit to doing some piracy. Then they also admit that ... they did indeed do a couple of copies. And as time goes on ... they too are copying one thing after another and passing it on. Is this moral? Is this legal?

I cannot answer a question of conscience; only you can do that. Indeed, there are many gray areas. This perhaps is the real problem. The laws are rather ambiguous. One man thinks a particular law reads in a certain way, while another interprets it in another way. This is normal human behavior, as common to man in Europe and the Far East as it is in America. However, Europeans handle this problem in a neat and orderly manner. We shove it under the rug.

American have never been ones to shove problems under the rug. You feel that answers must be sought out, and drag the process of finding answers into the media, cabarets and classrooms until all America and all the world becomes weary of hearing the debate.

What then is the answer to your problem? It is simple: shove your problem under the rug. Forget about it for a while (if your large software corporations will allow it). Repression has its place in our lives. When someone dies...we cannot grieve that death for too long or it becomes bad for our heath. I suggest you stop debating the software piracy problem compeletely. Let your lawmakers and your corporate lawyers do their arguing in your courtrooms, and you go about your computing in the way that makes you feel best. Computing can be fun, and you shouldn't feel guilty about things related to it, just as in anything in life; for it is our conscience that guides us to feeling good about ourselves. -Pierre Simon (in Electric Magazine)

ON SHARING MAGAZINE PROGRAMS

Q: If you type a program out of a magazine, is it all right to give it to others? -Derek Allyn

A: Not according to Compute!, but you can always give a copy to fellow subscribers; they've already paid for the right to have a copy. U.S. copyright law also protects the rights of lending libraries. This has good implications for group purchases of programs for occasional borrowing by members, like the nearby group that bought a copy of a Disk Recovery package to be checked out briefly to members who need it. Some magazines don't object to copying for new subscribers, but do hope you'll encourage the recipients to subscribe for themselves if they like what they get. -JS

AHOY'S ADVERTISER'S POLICY

One neat feature in Ahoy magazine's advertising policy is this phrase: "All mail order advertisers must guarantee full refund to all customers." If that became an industry practice, mail order would no longer be a problem! -JS

A B C DATA PRODUCTS, San Diego CA (800/354-1555)

Wabash 6 year warranty 5-1/4 ss, sd disks for $1.73!! Sound too good to be true? This is what the ad for A B C DATA PRODUCTS said (quantity 100).

They were out of both Wabash and Sentinel diskettes! But they had 10 Wabash diskettes with a library case for $15.95. Shipping was $2, but there was no tax. On the eighth day the package arrived. The diskettes were what I expected at a very attractive price of $17.95 total cost. -Al Harsch (in WCUC News)

LOU CARGILE, author of **Disk I.C.U.**

I purchased his **Disk I.C.U.** (to rescue and repair damaged disks and files) from A.B. Computers and discovered to my dismay that it wouldn't run on my 4040/64 combination, even with the PET emulator. So I wrote him to see if I could use it at all, or if I should return it. In truth, I didn't want to return it because the manual was excellent, even though I couldn't use the disk. A few days later he CALLED me from Arkansas and we had a nice chat; he told me he was revising the program for the 64 and would send me a copy when it was ready (he did). Unfortunately I still couldn't use the 4040, but it seemed to run fine on the 1541 which I practically never use. He then called me to see if I'd received the diskette in good shape. A few weeks later he called again to warn me that I shouldn't use the "copy" command, because he'd found a bug in it, and sent me a corrected copy as soon as he'd perfected it. Aside from the fact that this is a uniquely useful program with an excellent manual (still the best one available on the organization of the Commodore disk format - beats the Abacus manual hands down), Lou Cargile's concern for the user is commendable. It's nice to know you can call him if you ever have a problem. Still nicer to hear from HIM if he hasn't heard from YOU! -James K. Condon

CONTINENTAL SOFTWARE, producers of the **Home Accountant**

COMMENT #1: About six months ago I complained about this program's sluggish-like pace while reconciling checks. I also resented their $20 fee for extended warranty and update service. I'd like to reverse my previous complaints, because they have now sent me three revisions, each one faster than the last. I have now spent a total of $64 for what seems to be a useful, well-organized and fairly fast program (also three scratch disks.) I'm not using it at present because it requires one to set up "budgeted amounts" for each category of expenditures, and my expenditures are difficult to budget in advance (for example, the malpractice insurance premium, due in August, will probably be between $16,000 and $20,000 but may not be) but I no longer have any reservations about recommending it to others. Buy it as cheaply as you can and be sure to send $20 in with your warranty card - the updates are good ones. -James K. Condon

COMMENT #2: **Home Accountant** has bombed (again) and I am returning it! -George A. Keramdis

COMMENT #3: The company responses were interesting and could be summed up in 4 words: "It ain't an Apple." I find it hard to understand why 3 lines of code were required for every 1541 access unless they were opening and closing the file each and every time. Even then, the extra two lines per access don't cause the program to do 3 times as much. Perhaps, the real cause of all the problems ca be found in Mr. Densmore's response, "Apple routines were kept intact so support technicians wouldn't have to learn new code." As a 64 owner, I can do without that attitude. There are too many good home accounting programs written first for the 64 to have to put up with this attitude. This is the epitome of why

you should never, never buy any program without trying it or finding a qualified unbiased reviewer (which is what the Midnite and user groups are all about). Furthermore, you can't always believe a review in the major magazines either; have you ever read a negative review in one? -Larry Woolard

DON FRENCH, author of **Develop-64**

I bought his **Develop-64** package (editor, assembler, decoder, debugger, and manual) when it first came out - on tape. Later I acquired several 1541's (always had one at Commodore Service, one spare, and two in use) and discovered that though I could transfer the unprotected program to disk, it still expected me to save all my work on tape. I wrote to Don to asked how much it would cost to exchange my tape copy for one on diskette. His reply was to simply send me the latest diskette version, and the newly revised and enlarged manual - free. Thank you very much, Don. -James K. Condon

INFO-DESIGNS

Although Info Designs makes a pretty good series of business programs for the 64, their practice of charging for support is truly unfair. They recommended checks for their program which the 1525 couldn't handle because they are too heavy. Now I'm stuck with $100 worth of checks I can't use. Commodore states the 1525 will handle duplicates, but [their employees were] amazed I didn't know it wouldn't handle heavy paper. -Keith Klarin

MICRONOMICS

Good dealer - I bought my SX-64 from Micronomics, in Winchester MO, which is just west of the bypass around St. Louis. When I had trouble with Speedscript and my most-used utility, I wrote in panic. The owner immediately called me long distance to get more details, tell me that he had made inquiries of other users, etc. It turned out that there was no problem but stupidity on my part. The default colors on the SX are blue on white. My blank screens were the result of same color lettering and screen, easily remedied. -Macy McKee, Macomb IL

Disk Notes

UNEVEN PRESSURE DURING DISK FORMATTING?

Q: If you look at the Maxell diskette I sent you (notice the circular marks on the peripheral edge on the top), this is produced during formatting. I realize the disk heads are on the bottom side of the disk. Apparently excessive pressure occasionally ruins a diskette. Different diskettes show different characteristics (i.e., TDK diskettes show as burn marks again on top). Have you encountered similar disk problems? -Harry Metz, 699 W. 239th St., Bronx NY 10463

A: No, but if it happened to me, I'd sure check the load pad in a hurry. It's only a 25 cent piece of felt, so if you're worried that it's causing burn or other marks, just replace it. -JS

MOST RECENT 1541 ROM UPGRADE

The most recent ROM upgrade was made in December of 1983. The number of this current ROM is 901229-05. -Jim Drew (in The Northwest Users Guide)

THE SAVE WITH REPLACE BUG DOES NOT EXIST!

My claim in my July "Commodore Clinic" column in RUN that the save-with-replace command does work drew fire from a host of readers. Though a full explanation and hints for use will appear in a forthcoming "Clinic", here's an excerpt that I hope will eliminate mail and phone calls on the subject.

"During our LC^4 camp, I spoke with three of the foremost experts on Commodore disk drives (Jim Butterfield of Canada, Dick Immers of the U.S., and Mike Todd of England) about the legendary 'save-with-replace' bug. All were in full agreement that there is no evidence that such a bug exists, despite statements to the contrary in Compute, Compute's Gazette, The Transactor, and even a hint in RUN's own 'Magic' column. Jim Butterfield was quite emphatic on the subject, saying at one point that no one who has ever seriously studied the save-with-replace command has ever found any evidence that it has destroyed a single file. He added that fellow expert Harry Broomhall offered three years ago to buy a case of beer for the first person able to describe any procedure by which it could be shown the save-with-replace command had destroyed a file. Though there are many thirsty programmers, the case of beer remains unclaimed. All of the above-named experts have thoroughly studied the internal workings of the @SAVE command, and come to the same conclusion--it works!"

What most people are experiencing may be other problems created on the diskette surface days or weeks or months earlier that don't become obvious until you write a new file. WE REPEAT THESE HINTS:

1. DO NOT SCRATCH files preceded by an asterisk in the disk directory.
   (Use the Validate command instead.)
2. DO NOT USE Save with replace on a nearly full diskette.
   (You need enough blocks free to hold a complete duplicate copy of the file you want to save.)
3. MAKE SURE your disk drive is properly aligned and working at the proper speed.
4. MAKE SURE you are using the correct syntax: SAVE "@0:filename",8 for BASIC 2
   DSAVE "@filename" for BASIC 4.

(Note that BASIC 2 specifies the drive number as 0, even when you only have one disk drive. DOS in the 1541 is under the illusion it has a drive one - a throwback to its heritage from the 4040 - and works better when you always specify drive zero when writing or saving a file.) -JS

ON USING THE DRIVE NUMBER IN DISK COMMANDS:

COMMENT: About the way programs are written in general. Since becoming a confirmed dual drive user my pet peeve has become programs which will not access drive #1. There is NO REASON for this, except that the programmer has coded "0:filename" for every disk access, instead of leaving the "0:" out--which would be simpler coding and allow the dual drive DOS to hunt for the program on drive 1 if it didn't find it on drive 0. Hesware did it properly when they coded **Multiplan**, and I'm eternally grateful. Professional Software DIDN'T when they coded **Spellright**, and the result is that though you can use a dual drive with Wordpro/3+, you can't with its accompanying spelling-checker. A real pain in the ass; so much so that I don't use **Spellright** at all. The irony is that they had to make the program MORE complicated to achieve this inconvenience; simply leaving the "0:" out of all the disk access routines would have prevented the problem! Programmers, keep it simple. -James K. Condon

REPLY: To avoid problems sometimes attributed to Save with replace, it is good to specify the drive number when writing or saving a file to disk. It is also best to include it when initializing a diskette if failure to place a diskette in drive one would cause the program to halt. On the other hand, when loading or reading a file, the drive number may usually be omitted. -JS

(Also see **Education Notes** below for more disk hints.)

COMMODORE CAMP NEWS

One announcement we'd hoped to make last time, but lost the notice for, was Gerald Neufeld's Commodore College in Brandon, Manitoba. Gerald attended our LC^4 camp in Lincoln last summer, and according to one participant who attended both camps this summer, provided a similar and enjoyable experience in Manitoba this year. One Butterfield story came out of Manitoba. Jim reportedly announced after one meal, "The cooks are about to publish a new book--101 ways to prepare cardboard."

I also found humor in an excited note in the Bloomington/Normal (IL) users group newsletter that everyone should be sure to come and see Jim Butterfield's videotape at their next meeting, with no mention that Jim would be in nearby Lincoln the whole next week. I hope some people from Bloomington got to see him in person....

While we're mentioning LC^4, tentative dates have already been chosen for 1985. If the idea of a Commodore Camp for adults and mature youth, led by the best-known Commodore experts around appeals to you, mark June 23-29, 1985 on your calendar now. This year's 67 campers were every bit as full of praise for their experience here as last year's 53, and reportedly said their goodbys with "see you next year!"

Some also took with them a new invention. The new hardware class came up with an amazing "bumpless" 1541. That's right, a 1541 that can't shake itself out of alignment. The secret? A little spring that softens the impact when the head returns to track one. Yes, I know it shouldn't work, but it does.

Proving that there is always a hardware and a software approach to any problem, a disk poke to temporarily turn off the bumps also surfaced at LC^4, courtesy of visiting British expert, Mike Todd:

```
10 OPEN 15,8,15:PRINT#15,"M-W"CHR$(106)CHR$(0)CHR$(1)CHR$(5+128):CLOSE 15
```

Just type it before loading protected programs that thump the disk. Added bonus--faster loads. Possible liability--more failed loads, due to turning off the bumps that help marginal disks load properly. To turn the bumps back on, run it again, but change the last CHR$ to CHR$(5).

Adding 128 to the first version turns off the bumps by setting the high bit of location $6A (REVCNT) in the disk. Adding 64 would also turn off seeks, the checking for missing sectors a half track to each side of where they "should" be, by setting bit 6. On the other hand, if you want more error checking instead of less, you can increase the tries counter from 5 to as much as 31, representing the number of times to try reading a sector. 31 is the limit, because the count has to fit in bits 0-5. Hey, no need to understand all this! Just type in the fix, save it on a disk, and run it when you need it. -JS

FEW UNIVERSITY-LEVEL EDUCATIONAL PROGRAMS

I have a 10-system "lab" in use all day and as many nights as supervision can be provided. We use a variety of types of educational software (very little that is Educational, for little is of use to us, no matter what machine). There are only two commercial ESL programs in the USA at this moment for university level students - one is drill and kill; the other is a recent translation of a British program. The British have a lot of good things, mostly written for Sinclairs, of which several have been translated for the Acorn. Acorn, USA doesn't seem to know about these. So, we use other types of programs that do the right kinds of things, and we are trying to write some of our own.

We are particularly interested in speech synthesizers and digitizers. I have recently acquired S.A.M, Magic Voice, and Voice Master. I'm playing with these, to see what they can be made to do. I am surprised to see no mention of Magic Voice in the CES reports. I have heard two reports from people who went - that and the Okidata 15-color printer (also not mentioned) were two of their main topics. -Macey McKee, Macomb IL

Answer: GENEALOGY PROGRAM INQUIRY

David Kelley asked about a good genealogy program. I ordered one by Gordon Hillman, for $40 from P.O. Box 1151, Port Huron MI 48061 (519/344-3990) (or 1046 Parkwood Av., Sarnia ONT N7V 3T9 Canada). I am very pleased with this comprehensive program. It fills 100 blocks on the diskette, and comes with a demo program, as well as an indexing system. From the job menu I can add data (up to 664 ancestors on a single diskette), delete data, search for an ancestor (by name or file number), and index the names. I can then print (to screen or printer) 4 or 5 or 6 generation pedigree charts, the index of names and family group sheets. The instruction booklet is well written and easy to understand. One drawback is that when correcting any individual record, all information for that person must be retyped. Recommended to aid genealogists of the world! -Wayne Holt

Ham Radio Operators Update: CQ CQ CQ DE WA4SWF K

If you are an amateur radio operator, you know just what CQ (calling anyone) means. With computers in amateur radio today, things have really made a big change. You can buy interface units for your radio that convert morse code and teletype signals to a language your computer will understand. All the different computers have a net operation, where you can get help and learn a lot, or find a good sale once in a while. I have listed some frequencies you can tune in on to hear amateur nets talking only about radio and computer hook-ups. Hope to be hearing you on the Commodore Computer Nets soon! -Fred Jones, WA4SWF

DAY	TIME (UTC)	FREQUENCY	DAY	TIME (UTC)	FREQUENCY
Monday	0100	7155	Sunday	0500	14240
Thursday	1200	3825	Sunday	1330	7156
Saturday	1730	14240	Sunday	1600	14325

Question: KOALAPAD TOUCH TABLET

Q: I have purchased the Koalapad Touch Tablet for the 64. The literature indicated I could use it in place of a joystick. Everytime I use it in a program that requires a joystick, I only get right and left movement, by using the contact switches at the top of the pad. The drawing surface has little or no effect. The instructions supplied say to peek the paddle addresses for X and Y coordinates. -Keith N. Deancausse, 733 1/2 Dawson Av., Long Beach CA 90804

A: Sounds like you can use it as an analog joystick. Unfortunately, I've never seen a program for an analog joystick on the 64. -JS

Suggestion: ON COMPUTER FURNITURE

Since we like to use our computer sitting in an overstuffed chair, we bought a TV stand on casters with about a 1" lip about the top surface and a 4'x10" pre-finished shelf stand board. Then using angle brackets and metal plates we screwed on a 3-4" rise cut off the end of the board to make a shelf at the back of the TV stand for the monitor and printer. The 64 and a 1541 disk drive fit on the main level, books and magazines sit on the lower level, and 2 disk boxes are tacked on the side and under the shelf overhang. For about $30, we have a nice movable computer table, at a convenient height for lower-than-desk chairs. When in use, I usually put one end of the 64 on my leg.

I also hooked up all the electrical plugs to a 6 plug junction box. Then by plugging a "TV switch cord" into that outlet, the computer and all peripherals can be turned on and off together (also saving their switches). Be sure to mark the "special outlet" in the junction box. -Edgar R. Norton

Wanted: INTERFACE FOR RADIO-CONTROLLED CARS?

Q: Is there any interface I could buy for the VIC that can control radio-controlled cars? -Michael Scarola, 86-27 90th St., Woodhaven NY 11421

General Programming Hints:

PROGRAMMING HINTS FOR ANY LANGUAGE

Here are some game programming tips that NYCUG's Wesley James found in Atari Connection, from the programmers who write games for Lucasfilm:

1) First make it right, then make it fast. Reliability is not an add-on feature, but speed can be. The same applies to memory use.
2) Fail fast if ever. Do the hard parts first.
3) Work top down and bottom up. First decide what result you want. Then work to get it, but if you can't, find something more interesting by changing your goal.
4) Plan the sounds early; they are as important as the graphics. Everything that happens should have a characteristic sound.
5) Use humor, along with other emotions.
6) Make it realistic. It is vital that the game work on gut level.
7) Make it hard, but the hard parts fun, not frustrating - heroic, not arbitrary.
8) Make it easy to write, debug and modify. Code in BASIC now, Assembly later.
9) Make it perfect; there is no detail too insignificant to merit careful attention.
10) Break rules. If you understand what the rule is based on, you'll know when you can break it.
11) Make backups, keeping copies of several recent versions.
12) Document your program. You'll read it 50 times for each time you change it.

T.G. LEWIS GIVES US SOME OTHER COMPUTER LAWS

Infoworld's Doug Clapp quoted these computer laws from T.G. Lewis of Oregon State:

1) "The personalness" of a computer system increases with its interactiveness.
2) The work to program a computer to solve a problem plus the work to build the system is constant. Simple hardware is hard to program.
3) Software is hard. It is more feasible to build a computer than program it.
4) Knowledge costs more than software and hardware. The usefulness of personal computers decreases when people must know more to use them.
5) The ultimate personal computer is a robot. The goal of personal computing is to reduce the difference between humans and computers.

Assemblers:

CONDITIONAL ASSEMBLY WITH THE CBM ASSEMBLER

The CBM assembler on the 64 has one very important, but undocumented, feature: conditional assembly (a very useful way to assemble programs for any of several computers from the same source file[s], and also useful in working with MACROs). For example, most of the coding is identical in a display driver for 40, 64 and 80 columns; conditional assembly can make one source module for all 3. To change the display driver configuration, you just create and alter a variable label, like COLWID.

On the CBM assembler, you have 2 conditional assembler pseudo-ops. .IFE means IF Equal to zero, which causes the following block of code to be assembled. .IFN means IF NOT Equal to zero, in which case the assembler will assemble the following lines. A label expression can be a single label or an expression of labels joined by + or -.

Examples:

```
        .IFE COLWID-40   <
        .  ;The code would go
        .  ;right here instead
        .  ;of these dots.
      >
```

```
        .IFN FLAG   <
        .
        .  ;Ditto here.
        .
      >
```

Note the '<' on the first line, immediately after the label expression. This must be there to avoid an assembly error, as does the '>' in the first column on the line after the last line of code in the conditional block. -Mark Niggeman

High-Level Languages:

Hint: ON FRE() SPEEDS

```
50 REM IN GENERAL, FRE() TAKES .00008 * (N+11) 12 SECS FOR N STRINGS IN MEMORY
60 REM [ASIDE: A STRING OF L CHARS WILL OCCUPY .5*L*(L+3) BYTES OF MEMORY]
```

-in SFVCUG Users Port

Question: USING LOAD"NAME",8,1 AFTER EDITING

Q: I have a fairly complex BASIC program which uses some machine language loaded through LOAD"NAME",8,1. While such a file loads on first power-up, it may not load after some editing of a resident file. That is: LOAD A, EDIT A, LOAD B - Result: data from B is loaded okay, but the disk drive does not shut off and return control. -Joel Schneider

A: The problem may have to do with the finer points of chaining from one program to another in Commodore BASIC. There are at least 3 problem areas. First, after a Load command within a BASIC program, the program re-executes from the first line of whatever program is in the BASIC workspace after the Load, but without erasing existing variables. It is as though the program began with line 10 and contained this line:

```
900 LOAD"B",8,1:GOTO 10
```

Commodore BASIC will not even see the GOTO statement, because it will have already started over again from the start (line 10). Second, if your program loads other BASIC programs, all such loaded programs must be shorter than the first program, or they will load on top of its variables. Since the variables are not cleared by the new load, they will now point within the new program itself, and contain who knows what. Finally, if you are not careful to protect your machine language program from BASIC, it could either be destroyed by BASIC's variables, or destroy them when loaded on top of the variables. -JS

Low-Level Languages:

Have: CP/M PUBLIC DOMAIN LIBRARY

According to the May '84 issue of NYCUG's newsletter, NYCig, the CP/M library of the NY Amateur Computer Club is being translated into 64 format, hopefully by June '84. Their contact is Alan Hobbs at 212/371-6000x862. However, first read the note below from their subgroup, the NYC VIC20/C64 User Group, which "has undertaken the mammoth project of selecting the most interesting and useful programs from the CP/m Public domain library of its parent body, the New York Amateur Computer Club, and of transferring them into 1541/4040 format" (quote from their ad). -JS

Question: WHICH 64'S WORK WITH THE COMMODORE CP/M BOARD?

In some cases, Commodore CP/m boards are INCOMPATIBLE with the newer 64's. This is apparently unknown to all those who have been inquiring about our group's effort to supply "public domain" CP/m software. The problem is in the 64, NOT the board, as some older machines "work", but the more recent machines do not. Could your readers please write me with the following info, working CP/m or not, in order to help pinpoint the problem?

1. Do you have a working CP/m 64 system?
2. If not, where and how does it "crash?"
3. What does PEEK (65408) yield?
4. Your 64 serial number is:
5. Are the back slots silver or copper?

Commodore has been reluctant to give out any info or let us know if a patch is in the works (shades of the infamous "1541 glitch" of last year). Any comments by yourself or readers would be helpful. -Ralph Lees, N.Y.C. V20/C64 User Group (CP/M SIG), c/o NYACC, Box 106, Church St. Station, New York NY 1008 (home address: 103 Waverly Pl, New York NY 10011)

Modem Notes

BULLETIN BOARD NEWS

NAME AND LOCATION	PHONE	SYSOP	Punter?	HOURS
KCCI (Kansas City MO) (NEW #)	816/257-2502	Rick West	yes	24 hrs
Kramers Korners, Highland Park CA	213/259-8437	Valerie Kramer	64	?
Rockford Area Commodore Club, IL	815/654-4363	?	no	M-F 5pm-8am + 24 hrs. wkds.

ON PHONE PHREAKS AND MA BELL

In a typically American approach to justice, the SYSOP of a bulletin board system shut down for illegally including a telephone credit card number in its message base, is thinking of suing the phone company. Where else can you be an accessory to a theft (however unwittingly) and still sue the victim? Some people seem to have forgotten that however plump a target Ma Bell seems to present, she also provides us with what may be the best phone system in the world, and couldn't do so if people didn't pay for their calls. I was astounded, for example, to recently hear while placing a transatlantic phone call, that the reason directory assistance in England didn't answer might be that they were on coffee break, and would I call back later? Those who phone phreak (make calls without paying for them) are thieves, and the ones they steal from are the billpayers - you and me. -JS

EDITORIAL ON SYSOPS

MODEM users can access many BBS's free of charge, which are run by hobbyists like you and me. They tie up their own equipment and time to help further our hobby. We know them as the SYSOP (Systems Operator). Unfortunately, some users abuse the BBS by trying to break other users passwords and by leaving vulgar messages. I know of at least one local SYSOP that has threatened to close down because of a couple of these "knuckleheads." These troublemakers are ruining it for the majority of sensible users that appreciate the service. I've met a couple of local SYSOP's recently, and let me tell you, they are a "special breed." People don't realize the countless hours spent just maintaining their system; to compound the problem, SYSOP's now have to act as watchdogs. Next time you access a BBS, thank the SYSOP for their effort. If you are one that causes problems, someday we will thank you for causing the extinction of free BB's. -Mike Stout

For Sale: COMPLETE PET/CBM BBS SYSTEM

1 Commodore 8010 MODEM modified for auto answer and carrier detection, using Steve Punters' Bulletin Board System software, in 8050 format, but can make 4040 copy. $550 or best offer. - Ross Garber 14 Hillside Ct., Suffern NY 10901 (914/354-7439 after 2 pm EST.)

PUBLIC DOMAIN TERMINAL SOFTWARE?

Q: Could your user group please send me more information about your public domain terminal software. -Gilbert Ronquillo, Jr., 320 Glenna Dr., Apt. #123, San Angelo TX 76901

Q: Could you send me a free copy of **Terminal Vic** for the VIC? I don't have a disk drive, just the cassette. Please rush! -K.D. McCoy, 301 E. Murray #1, Visalia CA 93291

A: You can read a review of the **Terminal Disk** in issue #16, but I don't give it away. I charge $15 for my time and materials, and don't offer cassettes. Only the 64 diskette version can upload and download programs successfully. -JS

Update (see #17): ACCESSING THE COMPUSERVE DATABASE, by Joe Allain

Since Joe Allain wrote the very informative article (in issue 17), Commodore Information Network has changed its downloading format. The "TYP" has been replaced by the "READ" command for users not using VIDTEX; VIDTEX users now use the "DOW" command. If you are confused, get out of command mode using a "MEN" command and you'll get menus. They are very easy to use and hopefully they won't change before you read this update. -Mike Stout

Music Notes

Wanted: MUSIC THEORY PROGRAMS?

Q: My wife teaches piano and is interested in music theory software. I would appreciate any information you might have regarding the quality of software advertised in Compute!, including: **Songwriter, Fun with Music, Music Construction Set, Music Composer,** and **Music Machine.** -Lynn Harner, 2011 Central Av., Dodge City KS 67801

A: **Music Construction Set** was reviewed in issue #18, along with several other music programs; **Music Composer** is reviewed in this issue. We welcome reader reviews of the others, which we haven't seen yet. -ES

Wanted: MAKING MUSIC WITH THE AXXE SYNTHESIZER AND 64?

Q: I have a Commodore 64, a Music Composer cartridge, a Music Machine cartridge, and a 7-year old Arp Axxe synthesizer. What do I need to interface the 64 with the Axxe, and what will this allow me to do? -George Warner, 7806 Lakecrest Dr., Greenbelt MD 20770

A: You're out of my league. Readers? -JS

Printer Notes

Answer: PRINT RETURN ADDRESSES

A: In response to my question in Midnite#15, Rediform of Paramus NJ 07652 now makes a size 9 continuous form-fed envelope to fit the Epson FX-80 printer with 9 - 7/8" carrier (Item #OC610). -Connie Archambault, Meriden CT

For Sale: 1 ADA 1450n IEEE to SERIAL INTERFACE

Plugs into the IEEE port, fully addressable to device 4. Output is RS-232 serial (male connector). In factory condition. Selling for $90 or best offer. Contact Ross Garber, 14 Hillside Court, Suffern NY 10901

Question: CAN YOU USE A HEWLETT-PACKARD 150 WITH A CBM PRINTER?

Q: My problem is that I have just purchased a Hewlett-Packard 150 and wish to use the CBM 2022 printer (with -04 ROM) with it. Therefore, I decided to alter the character set to print standard ASCII. I removed the ROM, read its contents with my EPROM programmer, altered the character generator and copied the revised text onto a 2532 EPROM. The result was disappointing; the carriage kept cycling. Can you advise why? Is the ROM an 8K device? Can an ASCII ROM be purchased from Epson? -Melvin L. Field, 72 Angelica Dr., Framingham MA 01701

A: You've probably changed something you shouldn't. Try the original ROM to see if it still cycles. Epson does not offer an ASCII ROM for it, but Commodore did offer a revised -07 ROM briefly. Neither is an 8K chip. -JS

Question: HOW CAN I EXTEND THE PRINTER CABLE?

Q: I wish to move my 1525 printer farther than the length of the printer cable. Does Commodore make an extension cable, or do they recommend not moving the printer farther away? If I make up my own cable will this affect the way the printer works? -Ralph Gates

A: You can make your own, with two 6-pin DIN plugs and a 6-connector cable. Keep the length under 35 feet though, as the driving power of the serial bus is limited. Warren Radio (800 S.W. Jefferson, Peoria IL) also offers assembled serial bus cables in any needed length. -JS

Use: A COMMODORE MPS801 WITH AN INTERPOD

The Commodore Model MPS801 printer has a compatability problem, when connected to the Interpod IEEE interface. When you try to access a device attached to the IEEE bus on the interpod, you get back the error message, DEVICE NOT PRESENT. When the printer is disconnected, or if a 1525(E) printer is connected instead, there are no known printing problems. I have built an I/O cable that either allows use of the IEEE bus, or use of the printer. -John Bentley (in The Users Port)

Use: THE PROWRITER'S EVFU TO SET VERTICAL TABS

Many printers have some EVFU (electronic vertical format unit) capabilities built into their logic that lets you set vertical tab positions on the page. Commodore printers allow one of the most popular special EVFU settings, "skip over perf," using the chr$(147) command. Most other printers make you work some to enable this feature. The C.Itoh Prowriter allows 6 different EVFU programs to be set (for different forms) at once; its otherwise very user-friendly user manual from Leading Edge glosses over the many possible EVFU commands and gives a general example in TRS-80 BASIC! This program sets your Prowriter to "skip over perf." When run, these commands wait in your printer's buffer, until activated on the first print command. -Richard Schumacher (in CUGSL Newsletter)

```
100 rem set evfu in prowriter
110 rem
120 rem utility demo program
130 rem richard william schumacher
140 rem cugsl 1983
150 rem
160 rem secondary address of 0 for card/?
170 open 4,4,0
180 print chr$(147);"initializing printer"
190 l=66: rem page length
200 s=6: rem lines to skip at bottom
210 x$=chr$(29): rem command string
220 x$=x$+"a@"
230 for i= 1 to l-s-2
240 : x$=x$+"@@"
250 next
260 x$=x$+"c@"
270 for i=1 to s
280 : x$=x$+"@@"
290 next
300 x$=x$+"a@"
310 x$=x$+chr$(30)
320 print#4, x$;
330 close 4
340 print chr$(17);"printer evfu ready"
350 end
```

Wanted: SCREEN DUMP TO EPSON FX-80:

Anyone know where I can find a screen dump program from 64 to Epson FX-80 printer? I was willing to buy a new interface (Cardco +), but kept getting 'device not present' when I hooked it up. Tried to call the phone number listed, but have had two weeks of busy signals. -Connie Archambault, Meriden CT

Publishers Notes

CIPUG/PAPUG MEETING & MIDNITE:

COMMENT: Thank you so much for the interesting and informative presentation you gave at the recent joint CIPUG/PAPUG meeting. I am a relatively new addict to computers, and it is a fine experience to listen to people who really know the field.

In your "Commodore Clinic" [column in RUN magazine], you mentioned Midnite twice. As nearly as I could tell, you did not identify this magazine, nor did you explain how to subscribe. I know the answers to these two items, because I asked you at the meeting. I wonder how many others, though, may be interested, but puzzled? -Gene Carr, East Peoria IL

REPLY: There are reasons for not using a column in one magazine to tell how to subscribe to another similar magazine... Glad you found us anyway! -JS

Reader Notes

CONVERTING CB2 SOUNDS

John Z. Novicke has had problems trying to use the example on page 8 of Midnite #11 on "Converting CB2 Sounds". He thinks the line should read:

10 DEF FNC(CB2)=int(.5+14*(2[up arrow](1/12)*(LOG(255/CB2)/LOG(2[up arrow](1/12)))))

ON USER-FRIENDLINESS, MANUALS AND DOCUMENTATION

COMMENT #1: As one with "hands-on" experience with computers for less than a year, the terms "user friendly" and "powerful" are extremely offensive. I have yet to find a program that can honestly be called user friendly. Manuals should not be written by computer people. A program may be powerful when compared to similar programs, but it is impossible to write a program for a machine as slow as the 64 that can honestly be called powerful. The closest I've seen have been **Calc Result Advanced**, which has features not even found in **Lotus 123** (like formatted printing), and **PaperClip** (better than many IBM PC word processors). The entire industry should be ashamed of the number of errata in manuals and programs. Every magazine has a monthly column which corrects errors from previous issues. -Keith Klarin

COMMENT #2: I've considered suggesting Midnite run a contest to select The Worst Manual, but I suspect the judges would be deadlocked! Do companies search for writers who speak and write no English and have not conversed with a non-engineer in 10 years? Almost as bad is the way many manuals are reduced until a magnifying glass is needed to read them. I recently had to run the manual for **The Connection Interface** through an enlarger. -Elizabeth Kaspar

COMMENT #3: We've just received for review The Perfectly Clear User's Manual; Everything you've always wanted in a user's manual - and less. This spiral-bound book from Harper & Row is utterly blank, but nonetheless sells for $6 ($1 more than our User's Guide to Commodore Hardware, Software, and Peripherals!) All who still take their pet rock for a daily walk should line up to buy a copy immediately! -ES

COMMENT #4: "If you put an unlimited number of monkeys in a room with unlimited typewriters, you can predict that they will produce a typical computer manual." -Marian Thompson (in Computer Retailing)

MYSTERIOUS AUTHOR

Somehow I got credited with writing a "tip for tape users." I never wrote the article - and have never owned a datasette. Seems like I saw that article in Comm'PuToy Cult? -Rich Westerman

PLEASE RUSH...

No one is too old to have fun with the 64, but we did chuckle at the following note:

Dear Sir: Please send me your Consumers Guide book.

John E. Fouts, Jr., Haskell TX

P.S. I am 81, so please rush. JEF

(The order went out that day...)

SCREEN CLEAR FROM CURSOR CLARIFICATION

James Pring sent in this clarification to his article, "Screen Clear from Cursor":

"To avoid screen scroll after the Screen Clear From Cursor subroutine, the cursor must be repositioned before another carriage return is generated. This can best be accomplished by a PRINT statement after line 9140. In my application, I used a line location string (LL$) made up of Home, Cursor Down and Cursor Right, as required, and then just PRINTed the LL$. If your application requires the cursor to be in different positions each time the subroutine is called, I suggest a similar PRINT statement be used in the main program immediately after RETURNing from the subroutine in line 9160."

Quoteable Quotes:

ARE YOU AN ALIEN?

According to the January 10 edition of the National Enquirer (your basic yellow journalism weekly), the following are typical traits of aliens pretending to be human:

1) "Ownership of unusually large amounts of expensive high technology equipment, such as computers."
2) "An unusual object in the home which is highly regarded and protected."
3) "Sleep or work patterns of abnormal length."
4) "An unusual amount of information-gathering." (via Infoworld)

COVINGTON'S LAW

"Solving a problem means making it go away, not just setting up an equal and opposite problem to counteract it." -Michael Covington (in Microcomputer Printout, r.i.p.)

FROM A HISTORICAL PERSPECTIVE

Taxonomy of computing (MCP):

* 1940's	First in the world	* 1970's	Mini per building
* 1950's	Maxi per industry	* 1980's	Micro per desk
* 1960's	Mini per company	* 1990's	Nano per appliance

ODE TO COMPUTER WOES

Poem found on the wall of the Computer Centre of the University of Wisconsin (MCP):

"I am sick and tired of this machine,
I wish that they would sell it.
It seldom does just what I want
But only what I tell it."

SIZE ADVANCES

"Computers are shrinking in size even faster than the Royal Navy." -MCP

ON COMPUTER MARKET PREDICTIONS

The suggestion that IBM will take over the home computer market is similar to suggesting that Porsche will take over the auto market. Everyone might want one, but few would buy one to teach their teenagers how to drive." -from the Talmis report, "Software strategies in a Shifting Market."

ROYAL STAMP OF APPROVAL

According to Commodore Computing for April '84, Commodore UK is the first computer company to have its wares approved by the Queen of England. The Royal Warrant of Appointment means among other things that the Royal family uses and likes Commodore computers.

APPLE EXPORTS COULD BE HAZARDOUS TO YOUR HEALTH

In a pitch for tighter security on shipments of computers to Communist countries, C&SN reports top Pentagon officials have told Congress that Apple computers are being used to target battlefield nuclear weapons in Europe, using special programs written by the Nuclear Defense Agency. According to the story, more than fifty Apples have already been deployed in Germany.

A NEW CHAPTER

According to Fred Hoar of Gavilan in Infoworld, "The microcomputer industry is entering a new chapter--Chapter 11."

NATIONAL MOVEMENTS:

We recently received a press release from yet another "Worldwide Commodore Users Group", this time operating out of a P.O. Box in Blue Bell PA. As Midnite readers may recall, I have very little patience with commercialized user groups whose main purpose in life seems to be collecting membership fees through ads in Compute. I am equally impatient with any group, commercial or otherwise, that claims to be "National," "International," "Worldwide" or the like, without giving solid proof that it is in fact larger and better in some demonstrable way than groups with long-established claims to such titles.

In my opinion, only TPUG (The Toronto PET Users Group) in Canada has the legitimate right to proclaim itself "worldwide." With 18,000 members last time I heard, it may well be the largest computer user group in the world. TPUG is the only group powerful enough to do for North America what ICPUG (Independent Commodore Products User Group) does for Commodore owners in England--speak to Commodore with a single voice. Because ICPUG is the only umbrella user group in England, with regional and local groups in most towns, it has far more influence on Commodore and other suppliers than our Babel of independent groups State-side can ever hope to match. Among the benefits enjoyed by ICPUG members are 30% discounts on all Commodore hardware, made available precisely because they are united.

Since there is no hope of similar benefits developing if vendors are approached by half a dozen groups all claiming to be the worldwide Commodore user group, I propose that we all acknowledge TPUG's leadership, and let it become in North America what ICPUG is in England. In six years of involvement with TPUG from afar, I have come to admire it more and more, as a very honest and upright group, highly professional, and dedicated to helping users, rather than to making money. There is a TPUG ad in this issue, and I would encourage at least one member of every user group to join, thereby creating a single network covering all user groups. I would also like to propose a moratorium on other new "worldwide", "national", and "international" user groups. -JS

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REGIONAL MOVEMENTS:

On the regional level, I'd like to commend the Washington and Oregon user groups and editor John Jones for their excellent newsletter, Northwest Users Guide. It is now among the very best regional Commodore newsletters available. Write to 3808 S.E. Licyntra Ct., Milwaukie OR 29743 for more information.

VIC 20 Notes

WHERE'S THE VIC?

TOTL Software recently sent us a copy of their customer newsletter, a basically helpful resource for users of their products. In it, we found this intriguing thought:

"The VIC market suddenly seemed to dry up. We all knew that there were 2 million of them out there, but the retailers lost confidence, returned boxcars full of software, and refused to touch the product any more. Now we can only sell VIC software direct, and not a whole lot of it that way, it seems. Sometimes I wonder if the 2 million VICs didn't turn into 1.9 million doorstops."

How about it readers? How many of you with VICs are still using yours regularly, and what would it take to get you to buy new software for it? One thousand software houses would like to know. -JS

VIC INFO STILL AVAILABLE IN MIDNITE:

If you've been hunting for a regular VIC Notes section in the last few issues, don't panic! Most programming information we get for VIC's usually ends up under the BASIC section of Language Notes (because it applies to more than one Commodore machine), or under Disk Notes, Printer Notes or Video Notes. Reviews, of course, are labelled by machine. We'll still publish hints unique to VIC's if you readers send them in. -ES

SOFTWARE SPARKLE FIX ON EARLY 64'S:

You have discussed a hardware fix for the sparkle problem on early 64's. There is also a software fix (for example, if sparkle produces erroneous collision errors with the sprites in **Canyon Cruiser**). Toronto PET User Group (TPUG)'s public domain program, SPARKLE.C, moves the 16K bank, relocates the start of screen, and moves the sprite pointers. You run SPARKLE.C; then when you rewrite the program to accommodate the new locations (lines 400, 405, 430, 440, 490, 1320, 1325 & 1380), the program is sparkle free. I still think the best bet is to return sparkle units (for $75). -Henry Metz

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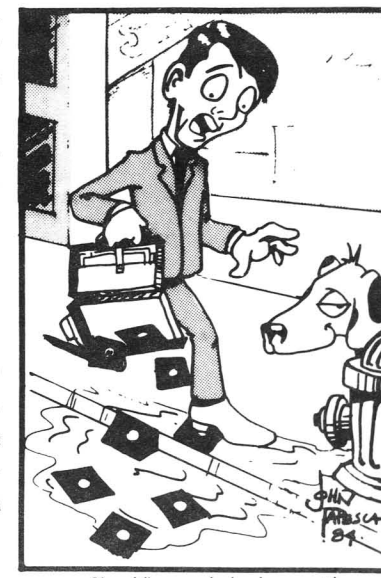

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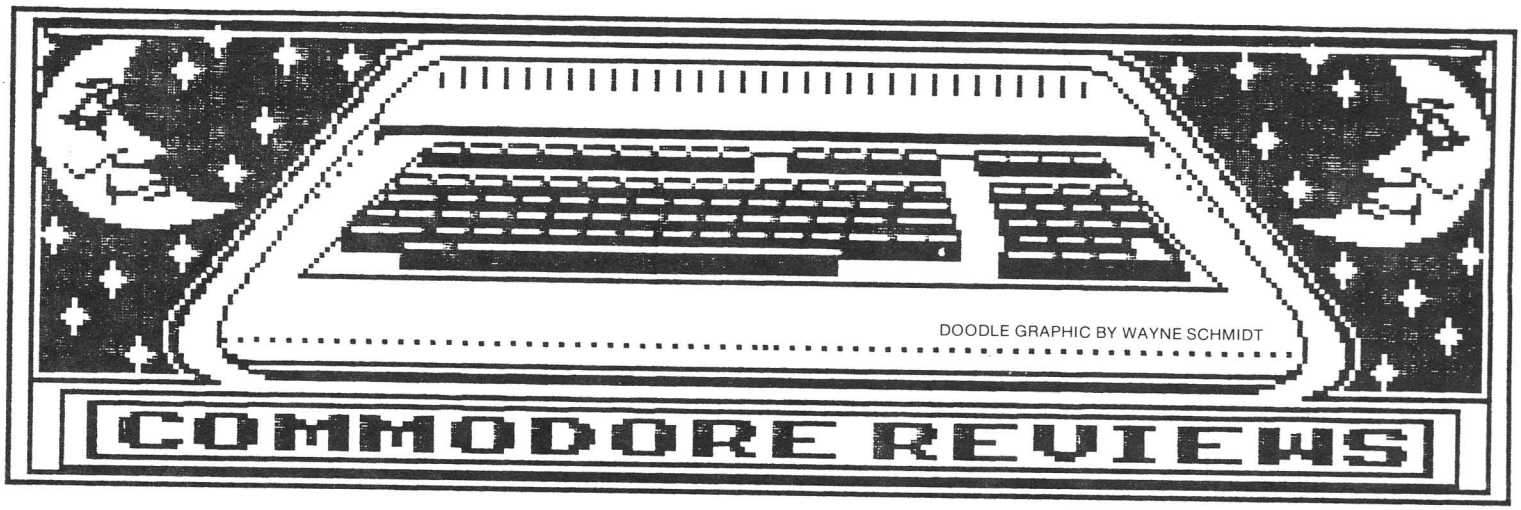

Book Reviews

THE BLUE BOOK FOR THE COMMODORE COMPUTER, for **all Commodore computers.**
$18 paperback from WIDL Video Publications, 5245 W. Diversey, Chicago IL 60639. 1983. about 150p.

This book attempts to be a complete list of products and programs available for Commodore's many computer lines. However, that would be difficult when it only covers 90 or so of the 800+ companies now selling in this market. The book is organized into several indexes, followed by product descriptions. The indexes include access by keyword, vendor and title, and special attention seems to have been given to the needs of schools and businesses in setting up the categories used. Due to the limited coverage, some topics are neglected. No disk drives or diskettes are listed, no printer transfer switches, and only one printer buffer, but several printer interfaces are mentioned. Some of our books are listed, but their descriptions appear to have been simply taken from the publicity blurbs given out by the publishers, rather than true evaluations. This will make the book less useful (but also less controversial) than a book which attempts ratings of its products. Physically, the book is printed in blue ink (a REAL blue book) on glued pages, making it a bit difficult to use for extended periods, and likely to wear out if used often. Although the book serves a useful reference function, it doesn't appear to quite match Commodore's own Software Encyclopedia, and would in any case be used most often as a reference in a school district or user group library. -JS

COMMODORE 64 FUN AND GAMES, by Ron Jeffries et al, for **64.**
Paperback from Osborne/McGraw-Hill, 2600 Tenth St., Berkeley CA 94710. 1984. 182p.

This is the 64 version of the excellent book, PET Fun and Games, by the same folks. It is full of enjoyable games to type in, taken from the pages of the excellent (but defunct) Cursor magazine. A new addition is 5 tiny programs that can be typed in only a few minutes for instant gratification. As before, a special listing format is used to ease correct typing. Although most of the value in a book like this is in teaching beginners how to enter and debug BASIC programs, those in a hurry or unable to type accurately may order a diskette version directly from the authors. As before, highly recommended. -JS

THE COMMODORE 64 LOGO WORKBOOK, by M.J. Winter, for **64.**
$13 paperback for grades 2-6 from Datamost, 8943 Fullbright Av., Chatsworth CA 91311-2750. 1984. 230p.

Finally, a LOGO text specifically for the Commodore version. Although the manual that comes with Commodore LOGO is among the best, and has been borrowed by Apple and Atari owners who wonder how to use their versions, it isn't a childrens' workbook. Datamost's workbook is just for kids though, and is very accessible. It has large pages, large type, lots of white space, places for kids to write in answers, and progresses through most of the simpler parts of LOGO at a pace most kids can handle. The 46 lessons cover many of the basic aspects of programming, omitting only a needed preliminary discussion about compass directions and degrees (most effectively taught as a lesson in map skills, using real compasses and charting real "paths"). However, only the appendix tells how to edit or use the disk, so read it first. The only other negative I could mention is that although the book lays open properly, I prefer the spiral binding of Datamost's other texts.

I've been hoping to find a book like this, so my son can learn LOGO. If your district is willing to pay for workbooks, it would also be ideal as a classroom workbook, on a par with Ed Carlson's excellent BASIC texts (also from Datamost.) Highly recommended. -JS

COMMODORE 64 MACHINE LANGUAGE TUTORIAL, by Paul Blair, for **64.**
Looseleaf binder from Kim Books (Australia.) 1984. about 60p.

This is the first text we've reviewed from "down under," but it would look quite at home on the shelves of any computer store Stateside as well. This book, by subscriber Paul Blair, described by the editor of Australia's Commodore Magazine as "a natural born teacher", arose from Paul's disastrous first steps into machine language, in hopes of helping others in the simple use of the main 65xx instructions.

A real strength of Blair's book is its organization - by type of instruction rather than by addressing modes. Another strength is extreme brevity, expressed in simple terms. Most instruction families are fully described on a separate single sheet. After the instructions and their various uses are all clearly described, Blair gives a brief introduction to the monitors and assemblers available, and the use of Commodore's assembler development system. Finally, he offers a lengthy and well-commented example of machine language programming, a wedge-type program that eases various screen operations.

Although the book lacks examples throughout, and lacks a full explanation of the final long example (such as how to type in the object codes directly from a source listing), it is a very helpful effort, especially if used alongside a more traditonal manual or reference card. Recommended. -JS

CRASH COURSE IN MICROCOMPUTERS, 2nd. ed., by Louis Frenzel, for **all computers.**
$22 spiral book from Howard Sams, 4300 W. 62nd St., Indianapolis IN 46268. 1983. 318p.

Designed as a fast introduction to the essentials of microcomputing, from chip architecture to word processing, with new sections on 16 bit processors, applications, and more on BASIC than before. Supposedly written for just about everyone, but primarily organized for programmed instruction, you use it with pencil in hand, answering several questions on each page (but you don't hop around the book like some programmed texts). There are 16 chapters, each to be completed at one sitting. Those in a hurry can get by with 4 overview chapters, software types can read 11 chapters, and hardware types are offered 8 chapters. Each chapter starts with a list of objectives, includes pictures dating from about 1980, and ends with a self-test (with answers.) The book ends with an index, and a list of machine-language and ASCII codes that don't fit Commodore products.

Commodore is not listed in the index, nor did I notice much that would apply to Commodore equipment in the more technical parts of the book. The focus (on Intel microprocessors) is hard to avoid when machine language is taught before BASIC! Those interested in the rumored PC clone from Commodore will find this helpful, but others won't. I found this book very helpful for quick learning, and picking up the vocabulary of a new field, but useless for later reference. I wouldn't use it as a textbook, but a student that wants to ace a micro course might do well to use it as a supplementary text. Apart from some chapters being unrelated to Commodore products, the information given seems sound, and not too dated. -JS

CREATING ARCADE GAMES ON THE VIC, by Robert Camp, for **VIC.**
$13 paperback from Compute! Books, Box 5406, Greensboro NC 27403.

As with most Compute! Books, this volume is excessively journalistic, and all in all something of a disappointment. The author's concept of arcade games is somewhat simplistic. The games listed are primitive though well explained; most use the keyboard for input even where the joystick would be more appropriate. There are no hints for converting these listings to joystick operation, although a joystick routine is included as an example. Beginning programmers can learn a great deal from this book, however. Experienced programmers may appreciate a few routines (the screen display in "Spark" is especially interesting), but can learn as much from the games published monthly in the Compute! magazines. -Will Stackman (in Sprite, no.1)

DIGITAL IMAGE PROCESSING: A PRACTICAL PRIMER, by Gregory Baxes, for **all computers.**
Paperback from Spectrum Books (Prentice Hall), Englewood Cliffs NJ 07632. 1984. 182p.

Though not specifically directed at microcomputer users, this is a good introduction to one of the most advanced uses of computers today. I found it especially interesting after reading a publicity release from the maker of a camera that interfaces to the 64. For instance, I had wondered why the pictures in the ads had mostly black and white spots, with few gray areas. The book gave an explanation, as well as one on how to manipulate images mathematically to fill in missing information. The book starts with introductory material, continues with software info, goes into hardware aspects, and finally gives some practical examples. If you are interested in making computer pictures from real scenes, this book will be a good introduction. Though technical, it is quite readable. -JS

THE FUTURE OF VIDEOTEXT, by Efrem Sigel et al., for **all computers.**
$10 paperback from Reward Books (Prentice Hall), Englewood Cliffs NJ 07632. 195p.

Since this book is not specifically about microcomputers, and only mentions Commodore twice, don't buy it to learn about your PET, VIC or 64. However, it does give a good introduction to the full range of videotext services now becoming available worldwide. Having just used the excellent Telidon system as a tourist in Canada, I was glad to read about it, as well as about the background and plans of Compuserve, the Source, and other information providers. Even so, this book is more suited for occasional use in a library than to take home and keep. -JS

GIANT BOOK OF COMPUTER GAMES, by Tim Hartnell, for **Microsoft BASIC computers.**
$8 paperback from Ballantine Books.

The bargain of the season is this non-specific games programming text. This collection has all the general algorithms for the basic board and simulation games that have been kicking around since the first hacker got his hands on a teletype. The programs have been translated into Microsoft BASIC with very few generic quirks. There is a brief table in the back to remind you of the few differences you may encounter. Most will play on an 8K VIC; all will fit on a 64. For those who enjoy game writing as the easiest way to practice programming, this volume is a must-have. -Will Stackman (in Sprite)

GRAPHICS FOR THE COMMODORE 64 COMPUTER, by Jeff Knapp. for **64.**
Paperback from Spectrum Books (Prentice Hall), Englewood Cliffs NJ 07632. 1984. 140p.
Includes a 1541 diskette of programs listed in the book.

A brief introduction to the many kinds of graphics on the 64. Starting from choice of colors and keyboard graphic characters, it proceeds into programmable characters, sprites and hi-res and multi-color graphics, with special pokes for such things as smooth-scrolling and screen blanking. The accompanying diskette helps a great deal, as typing in the many needed pokes would likely lead to many errors, and some listings are quite long. Unfortunately, nothing as pleasant as the cover graphics is generated by the printed programs. The author says such things were omitted because the listings would be too long or require machine language. Unfortunately, the resulting impression is that such things can't be done, when we know full well from various commercial "paint" programs that they can. As far as it goes, this is a fine book, especially with the included diskette, but I wish it went further. -JS

INTRODUCING COMMODORE 64 MACHINE CODE, by Ian Sinclair, for **64.**
Paperback from Spectrum Books (Prentice-Hall), Englewood Cliffs NJ 07632. 1984. 146p.

Though intended as a simple introduction to machine language on the 64, this text starts out as a guide to what's inside and underneath BASIC, and is probably too complicated to serve as a true introduction. For U.S. readers, terms are also a problem - denary, for instance, was a new term to me. There are also some inaccuracies, such as claiming that the power-on memory test fills memory with a set pattern. (That statement was true on the PET, but the 64's test is non-destructive, preserving whatever is already in memory.) Although otherwise quite usable, the book is not nearly as approachable as Richard Mansfield's Introduction to M.L. (see Midnite #14 & 18), nor Jim Butterfield's landmark text, forthcoming from Brady. Not recommended. -JS

MICROPROCESSOR FUNDAMENTALS, by Roger Tokheim, for **all computers.**
Paperback (Schaum's Outline Series) from McGraw-Hill, 1983. 378p.

For those who haven't used them to cram for a final, a Schaum's guide is organized into brief summary pages of information, followed by several questions about the topic, and more importantly, complete answers. This particular guide is a late high school to early college level guide to simple microprocessor systems, including both hardware and software. It includes a good deal of useful information, but unfortunately focuses only on the 8080 and 6800 microprocessors, neither of which has much relevance to Commodore owners. As for the future, 16 and 32 bit microprocessors are not covered at all. Though I prefer Schaum's brief summaries of key concepts to the programmed learning approach of the Sams Crash Course (see separate review), the Sams guide seems more current, and neither one is precisely tailored to the needs of Commodore owners. -JS

MUSIC AND SOUND FOR THE COMMODORE 64, by Bill Behrendt, for **64.**
Paperback from Spectrum Books (Prentice-Hall), Englewood Cliffs NJ 07632. 1983. 185p.

A competent and reasonably understandable introduction to the world of electronic music synthesizers, specifically the one buried in your 64. For example, it contains the first sensible explanation I've seen of ring modulation (most others say, "it has something to do with making a phone ring.") It also teaches you about musical keys and how to read sheet music, ending with several programs; a couple automatically harmonize with a melody you supply. To use the programs, you either type them in from the Commodore printout in the back of the book, or buy an accompanying diskette (not tested.) The accompanying programs don't compete with the better commercial music utilities, but would still make it easier to use the book. Though I didn't type in the listings, the rest of the book is authoritative and enjoyable reading. If you are interested in what really goes on when your 64 beeps, this is an excellent introduction. Recommended. -JS

PROGRAMMING WITH GRAPHICS, by Garry Marshall, for **all Commodore computers.**
Paperback from Spectrum Books (Prentice Hall), Englewood Cliffs NJ 07632. 1983. 120p.

This is the only graphics text I've seen lately that will be much good to PET and CBM owners. Though written to be as machine-independent as possible, it uses the PET for many of its examples, and tells how to get the most from its seldom-recognized graphic capabilities. On the other hand, VIC and 64 owners will find nothing useful here about user-definable character sets, hi-resolution and color graphics, and sprites, making it a poor purchase for owners of those machines. But for PET owners, it is clear, interesting, usable, and recommended. -JS

SIMPLE INTERFACING PROJECTS, by Owen Bishop, for **all computers.**
Paperback from Spectrum Books (Prentice Hall), Englewood Cliffs NJ 07632. 1983. 168p.

This text begins with a general discussion of how to connect things to a microcomputer, including such useful information as why we need capacitors between integrated circuits (decoupling), and how to make a power supply. Then the book goes into twelve actual projects, ranging from how to make the computer turn on an appliance to a home-brew MODEM. Also of interest were a ROM board, real time clock, key beeper, and graphics tablet.

The primary but unavoidable weakness of the book is its generality. In trying to fit

all micros, it says nothing recognizable about the specifics of doing such projects on a VIC, PET or 64. A similar weakness arises from its British background. By trying to minimize such divisive topics as household voltage, and the specific tones needed by a MODEM, it requires readers to learn elsewhere how these things specifically work in their own setting. Similarly, the circuits use general purpose IC's that are not always the best ones for use in a Commodore system. These weaknesses make the book most appropriate in a library setting, where all kinds of hobbyists can use it, but less appropriate for a Commodore-only group in any one country. I enjoyed the book, and learned from it, but would be reluctant to build its projects, for lack of the needed system-specific details it wasn't intended to supply. -JS

TIMELOST, by Andrew, Andrews and Giarratano, for **VIC.**
$7 book from QUE, Indianapolis. 1983.

A curious volume: an amateur comic book adventure combined with six VIC 3K game programs using polled keyboard technique. The story jumps from incident to incident, without development, and ends (of course) "to be continued." The program is well presented, with full commentary, quite playable, but not unique. A pretty good introduction to graphic games with some useful simple routines. -Will Stackman (in Sprite)

VIC - INNOVATIVE COMPUTING, by Clifford Ramshaw, for **VIC.**
$15 book from Melbourne House (Australia), Nashville. 1982.

Thirty interesting programs, mostly graphic games, presented in a very clear format. Minimal commentary, some routines unique and must be puzzled out. No joystick implementaton. Well worth experimenting with. -Will Stackman (in Sprite)

WINNING GAMES ON THE VIC-20, by Barrett & Jones, for **VIC.**
Paperback from Wiley Press, 605 - 3rd Av., New York NY 10158. 1983. 143p.

A nice collection of VIC games, with all but a few using the joystick, and only a couple needing a 3K memory expander. They range from the trivial to the intricate, both in play action and in typing effort required, and do include some useful explanations of unusual programming techniques used. Though mostly of the arcade variety, the games also include a few brain twisters. Techniques used include hi-res graphics, sound, custom character sets, and machine-language routines. Even though the listings were done on a Commodore printer, they're still fairly readable. Those who prefer may order a diskette or cassette of the completed programs separately. Though some adults may lack time or interest for typing in such programs, they are an enjoyable way for youths to learn programming and debugging. -JS

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Accounting and Finance Programs:

Preview: TOTL BUSINESS 3.6, diskette for **64**.
Accounting system from TOTL Software, Box 4742, Walnut Creek CA 94596.

Command Performance reports TOTL's accounting system has been enhanced. All modules are now compiled. Company info is now stored in a file, and more defaults are included to ease data entry. Other changes allow use outside the U.S. The Data/20 eighty column card now works, and invoices and p.o.'s can have up to 50 and 40 lines of data respectively. Invoices can include both tax and non-tax items, and the inventory file allows 3 prices per product and a reorder level. Editing of invoices has been eased, and duplicate invoices are ignored. The sales report has been expanded to include more info, and the A/R report allows selection by age of invoice. Checks can be designed and printed. Backups are easier than before. USCUG previously "approved" **TOTL Business**, and is now considering "endorsing" it. One clear impression I have from the USCUG report is that former versions badly need updating. (Just send the original diskettes and $28 to TOTL). -JS

Data Bases and Mail Lists:

Update (see #14,15,16,18,19): CONSULTANT (DELPHI'S ORACLE):

Ref: Craig Wittler, issue 19, p.18. **The Consultant** reports are NOT limited to 40 columns. Use a semi-colon (;) to continue a report line beyond 40 columns. An 80-column version is rumored soon to be available for the 64. On the minus side, mail labels are limited to 2 fields per line and (unlike good old **Flex-File**), you can NOT request an optional (and often useful) space between fields on the line. -Gary Stone

Update (see #18): THE MANAGER. $50 diskette for **64** from Commodore/$250 for **CBM** from CMD. Data base from CMD (Canadian Micro Distributors), 500 Steeles Av., Milton ONT L9T 3P7 CANADA (416/876-4741) or from Commodore (64 version only), 1200 Wilson Dr., West Chester PA 19380 (215/431-9100). Requires CBM printer, and 1541 disk for 64 or any CBM dual disk for CBM. Replacement diskette $5. BASIC plus Machine Language. DOS protected on 64 and cassette port dongle on CBM.

Specs: uses relative files; 1 related file; 16 prime keys; 250 fields; 40 characters/field on the 64 and 80 on the CBM; 1,500 characters/record on the 64 and 252 on the CBM; holds 2,000 small records on a 1541 and 4,000 full-size records on an 8250; 20 screens/record on 64 and 2 on the CBM; programmable in BASIC; works with **Easy Script** and **Super Script.**

This file manager has been popular on the CBM for 3 years, and is a GOOD package. For users who only need one file at a time, it is also a bargain, especially for 64 owners.

ADVANTAGES: Uses standard relative files, with nearly every desirable convenience for working with them included: sorts, searches, reports, screen dumps, dumps to word processors, etc. Has Commodore-recommended screen formatting, allowing you to easily design file formats. Includes somewhat programmable arithmetic functions. Display variables are recalculated each time the record appears to conserve diskette space. It's other key advantage is its user-accessible BASIC and machine language code, which allows the user to make custom changes.

SHORTCOMINGS: CMD suggests users and dealers develop custom applications. Unfortunately, none of the SYS calls and parameters are documented. Our reviewer of the 64 version called the manual "the worst collection of gibberish I've ever encountered", but later praised added documentation sent him by Commodore, adding "**The Manager** is a very capable program indeed; fully documented, it might even be fun to use." Other lacks include any way to restructure a file of more than 20 fields, prevent duplicate records, or

find newly-entered data without time-consuming key updates. Despite such minor troubles, we keep a 4,000 name mail list on the CBM version at Lincoln College (where I teach), and have had no trouble with it - making **The Manager** the only program we've used without a hitch on files of this size. Recommended. -JS

Update (see #16,18): **PRACTIFILE (Flex-File 2.1**, by Michael Riley.

For my money, this is still the best database program available. Requires a lot of disk switching with a single drive but runs without a hitch on an dual drive; can also be configured to run on hard disk (though why anyone would entrust all their data to one disk, hard or soft, is beyond me). I've been using it for over a year in several different applications and have encountered no problems whatsoever with the program. I did lose data on several occasions when using it with two 1541's but when I checked with Mr Riley, he said the problem was in the 1541, not the program, and recommended I get a dual drive, which I did. No problems since. Perhaps the most important asset this program offers is Mr Riley's phone number. He always sounds sleepy but has always helped me out, and has provided several free updates to solve small printer-related problems. Incidentally, I think there's an error in your tabular summary of database features in issue 19: **Flex-File** allows ANY or ALL field(s) to be keys, not just one. -James K. Condon

Electronic SpreadSheets:

MULTIPLAN, by Microsoft. $90 diskette for **64.**
Spreadsheet from Hesware, Brisbane CA. DOS Protected.

REVIEW #1: **Multiplan** is a "plain English" spreadsheet. Its ability to format cells in a wide variety of ways is a very important advantage. Each column can be a different width. After loading, about 10K is left for data. I have constructed a sheet of over 1,200 cells, and still had 10% left. If necessary, external sheets can be linked. **Multiplan** will support 8 windows at once, and linked-scroll two. Pressing STOP will abort any function without affecting previous work. Entering "?" calls up a help screen. The documentation is thorough and fairly easy to follow, [including] a cross reference to **Visicalc** commands, all of which are supported. It has fine error handling. Formulas can also be "locked" to prevent accidental changing.

The system disk must always be in place. Two drives may run much easier, since data is then stored on a separate diskette. **Multiplan** allows one to set borders, page width, page and print length, and control characters can be sent to a printer prior to output. I can find very little to complain about after several months. **Multiplan** is a very fine program and should meet any serious needs. I give it a hearty recommendation. -Gregory Chaney (in Hacker's Rag)

REVIEW #2: This spreadsheet version 1.06 is about the best I've seen available. It has many of the same capabilities of **Visi-Calc** plus a HELP option. Very nice for a beginner like me. The documentation was very complete, and I was able to catch on in a very short time, since I already knew how to use **Visi-Calc.** -Mark Niggemann

REVIEW #3: Quite simply the most amazingly capable program I've used yet. When I returned my warranty card Hesware sent a free update which solved the only problem I'd had with it (the early version couldn't print capital letters). I have programmed it to recalculate my net worth each month (the BOTTOM LINE!). Loads and works fine on the 4040, contrary to the review in InfoWorld (5/28/84), and prints out nicely with both my Mannesmann-Tally MT-160 (quickly) and 1525 (slowly). It will, of course, do all calculations necessary to fill out your income tax return if you feed it the proper template. Does anybody out there have a template for Form 1040? -James K. Condon

Word Processors:

KIDWRITER, from Spinnaker.

See update under Education Reviews.

QUICKWRITER III, $20 diskette for **64**
Word processor from Educomp, 2139 Newcastle Av., Cardiff CA 92007. DOS protected.

Easy to grasp, easy to use and flexible. The relatively short manual (35p.) is concise and clearly sub-headed for easy reference. All formatting commands are available for most writing needs: varying tabs, left and right justify, page headers, and line structure. Sufficient text management commands are available to clip-and-save, move text, and create form letters. Also accepts commands for special printer features such as reverse text and oversize characters. This program is certainly adequate for any serious writer, including high school and college papers. -Harry J. Bethke

Preview: WP64, word processor for the 64, By Steve Punter (with help from Keith Peterson, though Keith wouldn't say so.) $50 from Pro-Line Software, 755 The Queensway E., Unit 8, Mississauga ONT L4Y 4C5 CANADA. Requires 1541 disk. Printer optional. DOS-protected. Spare copy $20. 60 day media warranty.

Just as we were going to press, the long-awaited successor to Word Pro for the 64 arrived. Here are my first impressions of this important new program.

If you know how to use Word Pro, you'll find it easy to switch to WP64. Most of the common commands and format options work the same way on both. However, WP64 is both better and cheaper than Word Pro. If you have a 1541 disk, the first thing you'll notice is that WP64's DOS protection doesn't thump your disk. On the other hand, if you have an MSD disk, the first thing you'll notice is that the new protection doesn't like the MSD.

Once the program is loaded, you only have to answer 1 question instead of the previous 4. And instead of being limited to a very few printers, WP64 uses printer files like Paper Clip, allowing it to match new models as they appear. The review copy supports about a dozen printers, not including this C. Itoh 8510. It can also handle 2 disk units (singles or duals) at once, as units 8 & 9.

The new features you'll be hearing most about are the two-column output, true proportional spacing (on suitable printers,) and an option that lets you print on both sides of fan-feed paper by doing all the odd pages first and then all the even ones after you turn over the paper. To make that option even more useful, an alternating margin offset can be selected, to allow binding or punching your printouts.

Another new feature some will appreciate is word wrap, which keeps words from being broken up on two lines. Lack of this was a major reason Consumer Reports magazine disliked the earlier Word Pro. Even better is WP64's ability to load sequential files, with your choice of paragraph delimiters. Though WP64 can't use an 80 column adapter, it does have both horizontal scrolling and a special block mode which shows the general appearance of video outputs up to 160 columns wide.

At the moment, the weakest part of the package is the manual--a 9 page quick reference that does little more than list commands. A real manual will be along later.

One feature that may throw you at first is a "leftside" file that WP64 quietly writes to disk during two-column output. Don't panic when output suddenly goes to the disk instead of the printer.

It's good to see Steve Punter trying again! WP64's two-column output, word wrap and proportional spacing may send competitors back to the drawing boards.-JS

Computer-Assisted Instruction:

BIG BIRD'S SPECIAL DELIVERY, $30 diskette? for **64**
Object recognition game for ages 3-6 from CBS Software, 41 Madison Av., New York NY 10010

When playing **Big Bird's Special Delivery**, kids help Big Bird and Little Bird deliver packages to all the correct places on Sesame Street. Unfortunately,] the user [must remember] to type SYS8*4096 instead of RUN, once the program is loaded. The opening menu lists two games. In the "Same Game," the child must make exact picture matches. In the Right Kind game, a pear could be delivered to an address displaying a food item. Keyboard input is limited to 4 keys. There are 9 categories of objects to deliver, each with 7 items. Graphics are all high-res, attractively drawn, but unfortunately, very difficult to see on a color TV. Documentation is well-written and intended to be read verbatim to the child. Several pages of the brief manual encourage non-computer related activities, to teach object recognition, and add a touch of class to an already fine educational package. -Rich Westerman (in The Hacker Rag)

CODE COURSE/RADIO CODE TUTOR, by Jim Layton. Diskette for **64.**
Not DOS protected.

Code Course/Radio Tutor are a series of programs to teach a person morse code. The programs assume no previous knowledge of the subject. Graphically, a lot of work has gone into both of them. The menus are well designed. From a programming standpoint the programs are bulky, and use the "long way around" to accomplish things. No provisions are made for varying the code speed. It sends everything at approximately 13 words per minute. The major criticism of the programs is that the code sounds awful! Anyone attempting to learn code with these programs will end up with a very warped idea of what it sounds like! For this single reason, both are not recommended. -Jeff Smith

COMPUTER EDUCATOR SERIES: ENGLISH & SPANISH, $40 diskettes (2) for **64.**
Language quizes from Cymbal Software. DOS-protected. No stated warranty.

Very similar to the Cymbal Science package reviewed below. A claimed 200K of programs teach elementary level English and Spanish via typical computer-assisted instruction quizes. We got along fine until the program died with a syntax error in a thoroughly fouled up line 60050 of Spanish level 4. Until that point we had found nothing but quizes on various topics. The tutorials mentioned on the package cover were nowhere in sight. Thus, you might use it to test English or Spanish competence (if the bug was fixed), but probably couldn't use it to teach the subject. Overall, if it worked, it would be dry as dust. Not recommended. -JS

COMPUTER EDUCATOR SERIES: HISTORY & GEOGRAPHY, $40 diskettes (2) fo **64.**
Social science drill and practice from Cymbal Software. DOS-protected. No stated warranty.

A drill and practice package to teach social studies, history and geography to elementary students. It attempts to quiz students about the usual states and capitals, Egypt, Greece, Rome, the Middle Ages, rivers, and several other topics, ending with a final exam. In the North America option under social studies, the program died at line 5010 after finishing a SYS call. After our low opinion of Cymbal's other education programs in this series, and the similar boring quality of what we'd seen so far in this package, we called it quits right then. I can't imagine why Cymbal would go to so much trouble to provide glossy packaging and then not at least make sure the programs inside run. In a DOS-protected program, that's unforgivable. Not recommended. -JS

COMPUTER EDUCATOR SERIES: SCIENCE, $40 diskettes (2) for **64.**
Science tutorial from Cymbal Software. DOS-protected. No stated warranty.

Elementary level tutorials, quizes and games to teach general science, physics and chemistry, including a wide variety of such topics as planets, atoms, Ohm's law, cells, and ions. Includes a pen and notepad for taking notes, along with a template for the function keys, and a durable 1-page (folded into 8 sides) manual. Jamie enjoyed running the planets section, but claims it isn't up to date, because it says Pluto doesn't have a moon. One other objectionable point was the sounds - simple and appropriate when wanted, but not optional. We tired of them quickly; an elementary teacher would tire of them even sooner, and they do broadcast to all in the room how a student is doing.

The included "game" turned out to be another quiz, that asks whether various things are animal, vegetable or mineral-based. It, the tutorials and the quizes were all much like most other CAI (computer-assisted instruction) programs, usable but dull. When I finished the game with a perfect score, it listed my percentage, but made no comment, nor did it give any reward of graphic or sound displays. On the other hand, a valiant attempt is made to have a consistent user interface, including standard keys to do the same things throughout, and similar messages always appearing in the same parts of the screen. However, you need template that will soon be lost. This could have been avoided if the screen line that says "press FORWARD" had said "press F7." Also, part 2 of cells uses the function keys in a possibly better, but still different way than the rest of the package. Color and sound are both used, but not to any great advantage.

These programs might be useful in some classrooms, but it's difficult to see how they could hold a child's attention long enough to meet the claim on the cover ("double" your child's school grades in Science), unless they went from a low F to a high A. 'Taint likely, which may be why the package lacks a more specific warranty. I wouldn't buy it for Jamie even though he very much wants to learn all about science. Though well packaged and very large (200K or material), it wasn't able to hold his interest long enough to be used without us standing over him at home. It's probably better than the bulk of courseware available for schools, but that isn't saying much yet. -JS

Update (see #15,16): **KIDS ON KEYS**, $35 diskette from Spinnaker.

The authors wisely realized that if **Kids on Keys** is played often by the same children, the challenge of typing the names of the objects will disappear. Thus, an option to create and name new objects and then SAVE them to disk was provided. The program gave easy-to-understand prompts for the formatting of the data disk, and the joystick-driven drawing routine worked fine. When I tried to SAVE my new file of objects to the data disk, though, nothing happened. Try as I may, I couldn't get any new files SAVEd. If the "Make Pictures" option was neverused in **Kids on Keys**, the program would be quite impressive. -Rich Westerman (in The Hacker Rag)

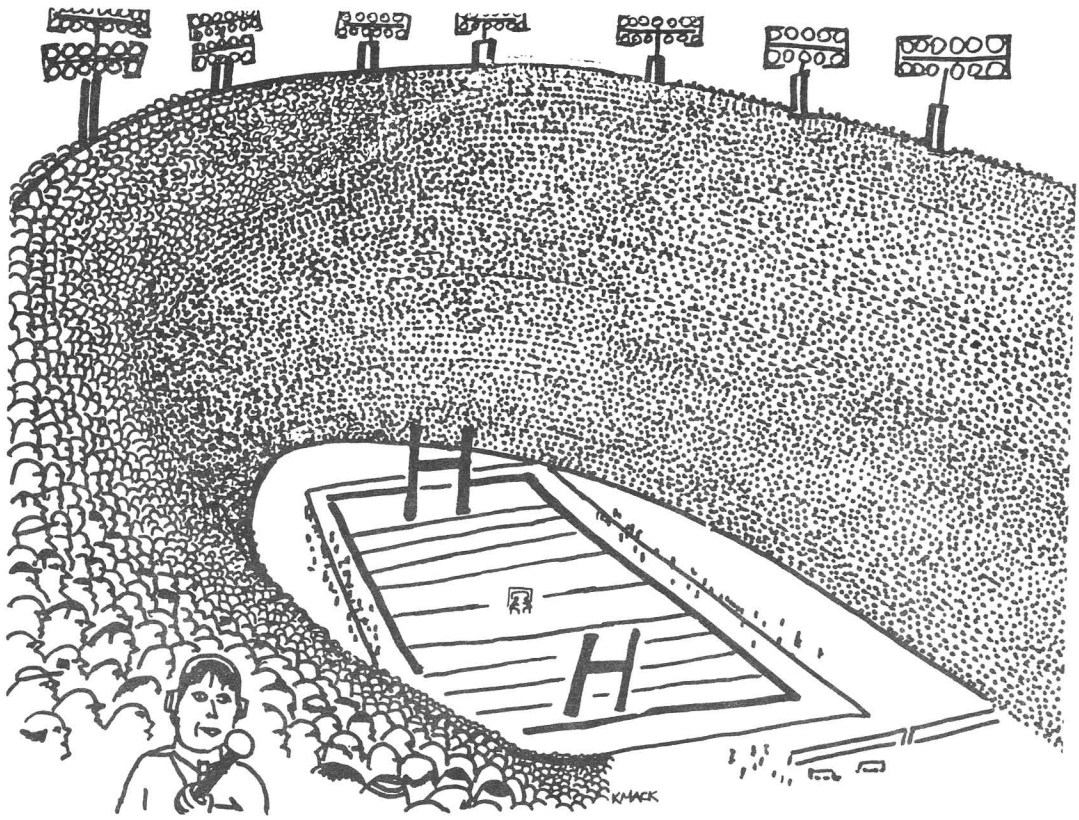
Update (see #18): KIDWRITER, $35 diskette for **64.**
Children's word processor from Spinnaker, 215 First St., Cambridge MA 02142. Unprotected.

Within half an hour, my 9-year-old had completed a 3-page, illustrated story of a fisherman whose boat overturned, and his subsequent rescue by helicopter. All was accomplished without once looking at the manual, thanks to lots of omnipresent and simple prompts, excellent error-trapping, and the comprehensive self-running demo. The child is first shown how to create an illustration for a story on the upper half of the screen, [using] a simple graphics editor to choose from a list of 99 characters and objects. The child arranges up to 8 on one of many different backgrounds. When finished, the child hits the (D)one key [which engages] **Kidwriter's** word processor to describe the illustration just made, [in] 8 lines per page. When the text area is full, the child [can] SAVE it to disk [or be given] another blank page to illustrate and describe. When the child wants to show the book to Mom or Dad, all pages of his story will be displayed sequentially - complete with a cute musical soundtrack. The perfect educational software package hasn't crossed my disk drive yet, but **Kidwriter** is the current contender for first place. I would like to see an enhanced version with a print-out option and perhaps a more sophisticated high-res drawing routine (a machine-language, joystick-driven one would be ideal). A first-class piece of software. -Rich Westerman (in The Hacker Rag)

BACKLESS CHAIRS, $50-200 for **computerists.**
One chair version from Goodtimes, U.S.A>, 122 W. 25th St., Los Angeles CA 90007

REVIEW #1: If computing = an aching back, try this... What is not a chair, not a stool, and resembles a padded pretzel? The back chair is designed to prevent backaches from long hours at the computer, say its promoters. Does it work? I have had mine for more than six months, and yes, it works as long as I remember to keep sitting correctly. Sitting correctly means resting your knees LIGHTLY on the knee pad for balance. And this, in turn, keeps your back straight. Too much weight on the knees, and they ache. I miss being able to lean bak to rest and think (no back on this chair), but that's a small price to pay for getting rid of my former backache. Another caution: don't try to get up quickly (I had to install another phone near by!); untangling your legs from it takes longer than you expect. Do try it before buying; some of my guests love it and others dislike it. -Elizabeth Kaspar

REVIEW #2: We bought this chair so that I can finish each issue of Midnite without excruciating back pain from long sessions at the computer. The only other solution until now had been a rocking chair, which allowed me to keep my knees bent at 135 degrees to my waist (compared to the normal 90 degree bend of most chairs). The backless chair is designed to make the proper bend and felt fine when I sat on it for awhile at the LC^4 camp last week. But once I got it home, would you believe Jamie claimed it almost immediately as his? It's perfect for seating two children for a computer game if they put their feet on the knee rest. It's also fun to lie backwards on the floor underneath the chair and rest your head on the knee rest. It also makes a dandy child's desk if you sit on the knee rest and put your elbows on the seat. As for sitting in it properly ... I most heartily agree with everything Elizabeth Kaspar says. It's a must when you need it, and a fun conversation topic when you don't. -ES



"Welcome to Monday Night Space Invaders....."

Adventure Games:

Arcade Games:

We're reviewing several Atarisoft cartridges this time, while the shell of Atari as we know it is still propped up. If you want one of their cartridges, either buy it now, before Kindly Uncle Jack's sacking of nearly all Atarisoft employees makes it hard to find, or else wait and hope he sells his remaining inventory at unheard-of low prices. -JS

BATTLE ZONE, $50 cartridge for **64.**
Tank war from Atarisoft, Sunnyvale CA. 1 player. Requires joystick.

In this somewhat trivial game, you aim a tank's turret and fire its gun at other tanks and flying saucers attacking in a circle around you. Sometimes they are protected by barriers that grow and shrink. As the enemies close in, they grow in size. Shoot them before they grow too large, or you'll be shot (have your windshield cracked.) The graphics in this low grade effort are no better than those on the original PET, and the sounds worse than the CB2 sounds we used to make on it. The game becomes boring within the first 5 minutes. **Neutral Zone** was vastly better, and even it was - not recommended. -JS

Update (see #18): BLUE MAX, $30 diskette for **64.**
World War I flying simulation from Synapse Software, 5221 Central Av., No.200, Richmond CA 94804. DOS-protected (loads from 1541 or 4040). 90 day media warranty. Requires joystick. One player only. DOS protected.

UPDATE #1: Better than **Zaxxon**, but similar. You take off and fly diagonally on the screen. Get up to 100 miles an hour and take off (simpler than **Flight Simulator II**). Bomb factories, roads, cars, bridges and tanks while tanks shoot at you from the ground and enemy planes attack you from all directions. Find a field to land in when your fuel runs low or somebody shoots a hole in your tanks. The program rates your performance when you're all done; low ratings include "Kamikazee Trainee" and "Runway Sweeper"; I don't know what the high ratings are yet! Simple shoot-'em-up in concept, but difficult to play well and therefore appealing (like **Pac-Man**). Nice graphics, quite believable. Should be popular. -Patrick Condon

UPDATE #2: This game is for the World War I Ace in all of us. It is very well done, but some of the targets that you have to shoot at are sometimes impossible. But I like it a lot. Recommended. -Mark Niggemann

Update (see #19): CENTIPEDE, $50 cartridge for **64.**
Bug war from Atarisoft, Sunnyvale CA. 1-2 players. Requires trackball or joystick.

The original trackball game, requiring instant motion in all directions. The game can be summed up as, if it moves shoot it, and if it doesn't move, shoot it anyway. All the standard critters from the arcade version are here, and the action is just as frantic. The graphics are somewhat varied and the sounds plentiful, but neither is state-of-the-art. Still, it's an original game concept, well copied from the arcade version, and might be worth having at a more reasonable price. -JS

DEFENDER, by Williams. $50 cartridge for **64.**
Space war rescue game from Atarisoft, Sunnyvale CA. 1-2 players. Requires joystick.

As for play action, this is a fairly accurate rendition of the original arcade version. However, its graphics seem very primitive compared to more recent competitors, and its sounds are hardly worth mentioning. If you really enjoyed the arcade version, you may still like this anyway. -JS

DONKEY KONG, by Nintendo. $5Ø cartridge for **64.**
Rescue game from Atarisoft, Sunnyvale CA. 1-2 players. Requires joystick.

Another truly successful arcade game, faithfully converted to the **64.** You are Mario, trying to rescue your girlfriend from a large ape who has carried her off. To do so, you must climb from the bottom to the top of 3 different game boards, avoiding everything the big ape throws at you - a very difficult, but interesting task, with well done and varied graphics, including cartoon sequences. The sounds are also pleasant, though simple. If any Atari game is worth its lofty asking price, it would be **Donkey Kong.** Recommended. -JS

GALAXIAN, $5Ø cartridge for **64.**
Invaders game from Atarisoft, Sunnyvale CA. 1-2 players. Requires joystick.

In this 8 level **Space Invaders**-type game, the baddies peel out of formation and attack in ones and twos. Hitting anything is more difficult than in the original Invaders, and the attacking ships are harder yet to hit, but worth more if you do. Clearing the board is quite a chore, requiring shooting what you can and avoiding swooping baddies you can't hit. As usual, you only get one active shot at a time, so a miss means a delay. Although it's as good as the original, it's no better, and is beginning to look dated. The music is unworthy of the SID chip, and the graphics are only marginally better than the public domain version on the PET. Overpriced for a one-activity game, however well done. -JS

JUNGLE HUNT, $5Ø cartridge for **64.**
Rescue game from Atarisoft, Sunnyvale CA. 1-2 players. Requires joystick.

First you swing on vines without missing and falling, then swim the lake while avoiding or killing crocodiles, then run up the hill jumping over bouncing boulders, and finally rescue your girlfriend by jumping over native guards about to cook her. 3 levels of difficulty. At advanced levels, monkeys appear on the vines. Finally, an Atarisoft game as good as its competitors'! The graphics are excellent, and the sounds appropriate (if uninspiring), and the play action varied and enjoyable. Having a worthy goal helps, too. I wish it were cheaper, but recommend it anyway. -JS

LUNAR LEEPER, $5Ø diskette for **64.**
Rescue game from Sierra, Coarsegold CA 93614. 1 player. Requires joystick.

In this truly wierd game, you pilot a flying saucer, sent out to rescue stranded wanderers from a flock of jumping eyeballs that like to eat flying saucers. (Watch your fuel supply!) With a bit of luck, you might even shoot a Leeper while it is vulnerable. Some aspects of the graphics, especially the leepers and field of background stars are very well done. Other parts, such as the mountains, are strictly amateur. The sounds are simple, but acceptable, and the play action enjoyable. Now that a series of Sierra educational programs also uses Leepers, schools might want to use it as a reward. -JS

MOON PATROL, $5Ø cartridge for **64.**
Invaders game from Atarisoft, Sunnyvale CA. 1-2 players. Requires joystick.

In **Moon Patrol**, you wander over a red desert under green snow-capped mountains in an armed moon buggy, while a simple tune plays. Besides jumping over natural pits and pulverizing boulders in your path, you'll need to destroy attacking space ships and saucers, avoiding their missiles, bombs and the craters they make. When you die, the buggy blows up, and you are allowed to either continue from where you are or start over. The goal appears to be to cover as much ground as possible (in 2 levels), but we lose too quickly to discover what rewards you get. Though the action is faster and more varied than in most Invader games, the modest graphics and music are poor for so costly a game. -JS

MS. PACMAN, $5Ø cartridge for **64.**
Maze game from Atarisoft, Sunnyvale CA. 1-2 players. Requires joystick.

In this updated version of the first arcade game designed for women, you are a feminine version of the famous dot gobbler, followed by several ghosts. After you complete certain levels of difficulty (out of 7), there is a brief cartoon interlude, and the maze changes. **Ms. Pacman** appears to be a full copy of the arcade version, with good play action and graphics and plentiful if uninspiring sound. At $18-2Ø, it would be a bargain. -JS

PACMAN, $50 cartridge for **64.**
Maze game from Atarisoft, Sunnyvale CA. 1-2 players. Requires joystick.

In this adaptation of one of the all-time great arcade games, you gobble dots in a maze, followed by several ghosts after your hide. If you eat a big dot (power pellet), you chase ghosts for a while. 8 levels of difficulty. **PACMAN** appears to be a decent copy of the arcade version, with good graphics and simple sounds. Unfortunately, the play action is much rougher than **Ms. Pacman**--the joystick feels as unresponsive as an automatic transmission. Even at a lower price, I'd prefer **Ms. Pacman.** -JS

POLE POSITION, $45 cartridge for **64.**
Steering game from Atarisoft, Sunnyvale CA. Requires joystick.

In **Pole Position,** your viewpoint is that of a tall truck or low helicopter just behind the race car you guide around your choice of a short or long course. You also watch several gauges on the lower part of the screen that monitor your car's performance. The goal is to cover the course quickly, passing other cars as you go. This involves steering, accelerating and shifting, to the accompaniment of various noises. The best part of the game is the colorful graphics, such as the Atari blimp announcing the start of the race, and good use of perspective. The game also has a good feel, holding a set course without constant attention. Even so, there isn't really much variation. Overall, Jamie liked it enough to play regularly, but I prefer **Motor Mania** and **Lemans,** and can't imagine paying this much for a single activity game. -JS

ROBOTRON 2084, by Williams. $50 cartridge for **64.**
Alien shootout from Atarisoft, Sunnyvale CA. 1-2 players. Requires 1-2 joysticks.

Nine levels of play. In this game you wander around a board, avoiding obstacles while luring baddies into them. You can also shoot the baddies, but won't want to kill the last one until you've successfully collided with two particular baddies that are worth extra points when run into. Unlike most two-player games, **Robotron** has both work together, one player as navigator, and the other as gunner. It's a good concept, that other companies should include in their games, and makes this otherwise unremarkable game worth serious notice by families with two or more arcadians. The brief on-screen instructions were also helpful, and needed by the other Atari games. If only it were about 40% cheaper! -JS

Update (#16): **SERPENTINE**, by Mac Senour. $35 cartridge for the **64.**
Shoot-em-up arcade from Broderbund, 1938 - 4th St., San Rafael CA 94901. For keyboard or joystick. Unlimited free replacement warranty.

Like the VIC version from Creative Software reviewed in Midnite #16, the 64 version of **Serpentine** is quite addictive. In it, you are a snake, trying to eat other snakes. Since they are larger, you must attack from the rear, nibbling them down to size. You can also gain strength by eating frogs that occasionally appear, as well as eggs laid by other snakes. On the other hand, if you let the eggs and frogs alone, watch out! The eggs turn into more snakes, and the frogs aid someone else's growth instead of your own. An apparent bug in the program makes it take 2 tries to boot on my machine, and prevents starting at all on some 64's unless the SPACE bar is held down (that should be fixed, Broderbund!) Though not as involved as some of the newest games, **Serpentine** is still among my favorite games, good for a few quick plays any day. Recommended. -JS

SPACE TAXI, $35 diskette for **64.**
Game from Microprose (Muse) Software, 347 Charles St., Baltimore MD 21201.

The object of the game is to get as much money as you can by ferrying passengers from pad to pad and from screen to screen. For delivering the person you get a basic fare; the quicker you get the passenger to his destination, the higher his tip will be. If you earn $300, you will get an extra taxi (you start with five). There are five levels (by "Shift"). One of the best things about this game is that it talks. The people say things like "Hey, Taxi!", "Thanks", and "Pad 2, please" throughout the game. The speech is actually built into the 64. An excellent game. -David Priess (in Peeks and Pokes)

Strategy and Simulation Games:

MURDER BY THE DOZEN, $35 diskette for **64.**
Detective game from CBS Software, 1 Fawcett Pl., Greenwich CT 06836. 1-4 players.

It plays exceptionally well. With more than 4 players, you can play in teams. **Murder by the Dozen** keeps clues hidden from each opponent [and] also keeps the solution hidden till one sleuth tries to solve the crime. If you guess wrong, you are out of the game, but the other players keep playing till the mystery is solved. The game keeps track of the time it takes you to interview, search or move from one place to another. After the game starts, each player's turn is determined by the amount of time spent, so plan your moves very carefully, because the time adds up very fast. The computer even keeps track of how much time it takes to drive across town. If you are looking for a good mystery game, this should be in your library. -Don Hyland (in Peeks and Pokes)

ONE-ON-ONE, $40 diskette for **64.**
Electronic Arts, 2755 Campus Dr., San Mateo CA 94403. DOS-protected (1541 only). 90 day warranty. 1-2 joysticks required. 1-2 players. 4 levels of play.

REVIEW #1: Best game I've played since **Jumpman.** Has many features of a real game, including fatigue lines at the bottom of the screen (your play slows down as you get tired), hot and cold streaks, a referee who calls fouls (but is more lenient in the lower "Park and Rec" level of play, a shot clock (you have only 24 seconds to shoot), shattering backboards (swept up by a little old janitor) and instant replays if you make a really good shot. You can pause the game for dinner, play or replay in slow motion, call time out, and even improve your REAL basketball game by reading the tips on defense and offense in the 16-page manual. You can be either Dr J or Larry Bird. Their playing styles are really different; for instance, Bird tends to be better on long shots while Dr J is a better slam dunker. You can play to a preset score, or play timed quarters. I haven't tired of this game in over a month of daily play; I think it's the best sports game yet. -Patrick Condon

REVIEW #2: The best program I have seen by any company thus far. Everything about this basketball game is really nice - graphics, sound and realism. It is also full of surprises, like a referee that calls fouls like hacking and reaching in, and a 234 second violation if you go to shoot the ball and touch ground before you shoot. One secret I have found is, after you shoot the ball, start running for the basket to make the rebound. After you get the rebound, try again. -Todd McDonald (in Fox Valley 64 User Group Newsletter)

REVIEW #3: Larry Bird and Dr. J face other on the court in this amazing game. The excellent graphics are best displayed when a player slam dunks a little too hard. A shattered backboard comes crashing down on the floor; then a robot janitor comes out and cleans up, while chewing out the guilty player in a language all his own. I recommend this masterpiece of a program. -Mike Stout

SUMMER GAMES, diskette for **64.**
Olympic games simulation from Epyx, 1043 Kiel Ct., Sunnyvale CA 94089. Protected. Uses 2 joysticks.

REVIEW #1: **Summer Games** is a bunch of sport simulation games with some pretty good graphics. My favorite event is Gymnastics, but you can run, swim, jump, shoot, or dive, and so on. It even lets you see the opening ceremonies! It's a pretty good collection of games, including skeet shooting, freestyle swimming, and a number of other events. It's nice, and just in time for the real thing. -Casey Westerman (in The Hacker Rag)

REVIEW #2: Yep, there are are some great animated graphics here. Lots of music, too, in the form of the winning contestant's national anthems, which are played as national flags are displayed .. and that's my gripe with the game. If we've learned anything from the political fiascos surrounding the last several Olympic Games, it should be that all the flags, uniforms, and idealogical hooey should be left back home. -Rich Westerman

REVIEW #3: Lets you practice or play the part of 18 different countries. You can compete against each other or against a computer pacer. You use the joystick in every direction possible. Easy!? Not unless you read the manual for all the joystick options, and then I wish you luck. -Julie Hyland (in Peeks and Pokes)

Disk Drives and Accessories:

COMMANDER II, $365 single disk drive for **64** or **VIC.**
Single unit storage device from Laser Micro Systems.

A substitute for Commodore's 1541 - close enough to run Electronic Arts programs, **Sysres,** and a variety of DOS-protected games, but unable to run **Mail Pro** because the Commander II screwed up the relative files. The case is of metal, and nondescript, with the serial bus connector holes on the left side. Reliability is unknown thus far, as is its legal status. However, it does exist, and works on some things. -JS

COM-COOL PLUS, by Aier Products Co. $80 fan for **1541** disk drive.
Disk drive cooling fan distributed by City Software, Inc. 735 W. Wisconsin Av., Milwaukee WI 63233. 1 year materials warranty.

A disk cooling fan with 2 surge protected outlets [that] sits on top of the drive over the air vent and blows filtered air down through the drive. The fan adds 3 - 1/2" height to the drive, and partly extends 1/2" past each side of the drive. The front has lights to monitor power, ground and protector; the back has 2 air intakes with easily removable filters. The ad claims the unit uses state of the art surge and spike suppression. A more economical product, **COM-COOL,** does not have surge suppression or line filter.

After two 1541 disk drives went bad, I purchased the fan. I have used the unit for several months now, [sometimes] continuously for periods of over 8 hours, [with] no further problems and the drive stays very cool. The fan makes a constant noise I have learned to ignore, and creates a slight vibration that has not affected any reads or writes to the disk. Overall, I am well satisfied with it, but would recommend buying the cheaper model without the surge protection. The additional cost is more than enough to purchase a quality suppression circuit with known specs. -Curt McCullers (in WCUC News)

DISKETTE 140, $40 wooden box for **all 5-1/4 inch disketes.**
Diskette storage box from Recreational Products, Chicago IL 60612.

I finally found a way to keep my 2 year old daughter out of my diskette library when she sneaks into my computer room. I ordered this nice table top wooden diskette holder with a lock. The pecan-grained, vinyl laminated wood unit holds 14 diskettes and is nicely styled with its rolltop door. **Diskette 140** is available from Spiegel in Chicago if you have trouble finding it, and although it's not cheap, I recommend it. -Mike Stout

THE 1541 EXPRESS, $90 cartridge for **1541 disk drive.**
Speed-up ROM from RTC, 10610 Bayview, Richmond Hill ONT Canada L4C 3N8.

REVIEW #1: If you find the 1541 disk drive impossibly slow, you can speed it up from 50-300% with **The 1541 Express.** Two wires with alligator clips extending from the cartridge attach to pins inside the 64. It occupies one of the drive buffers and is transparent to any commercial software that doesn't use that buffer. It can, however, be turned off and on with a typed command. -Elizabeth Kaspar

REVIEW #2: RTC's booklet is clear and thorough, and hook-up was no problem. RTC was telling the truth about the speed increase; I never found an increase of less than 100%, [using some] rather long programs: **Paperclip, Delphi's Oracle, Data 64, Defender** and **Jumpman.** RTC has done a good job with a tough problem. Even Commodore has not been able to get a fast disk drive to work with the 64. Also, RTC is up-front about the **1541 Express** limitations [in] their booklet. First, some games cannot be loaded using fast mode. You can easily switch to slow mode, and then back to fast mode once loaded. Second, some printer configurations will not work with **1541 Express:** Serial printers must be turned off during fast mode; parallel printers using the serial port must be totally disconnected

during fast mode (but those using the user port and RS232 printers are no problem); and a parallel printer running off a BusCard will not output at all - a serious problem. Third, you cannot write relative files in fast mode. You also cannot READ relative files in fast mode, which RTC says you can do - another serious problem. Since any good database uses relative files, the use of **1541 Express** is severely limited. You can write relative files in slow mode, but have then gained nothing. **1541 Express** is not a perfect low-cost solution to the 1541 speed problem, but it is a good attempt. -Earl Dunbar (in The Hacker's Rag - and anonymously in a dealer's newsletter)

Expansion Memory Boards:

BI-80, $200? cartridge for **64.**
80 column adapter board from Batteries Included, 186 Queen St. West, Toronto ONT M5V 1Z1 CANADA 416/596-1405. 1 year warranty.

For some time now, people have been asking us when someone would bring out an 80 column card for the 64 that is better than Data 20's. Although that unit worked adequately for us in very brief testing last December, it was only compatible with the older 64's using 5 pin video connectors, is physically large, and ran quite hot. We have also heard numerous complaints about its clarity. Now there is an alternative. We were quite impressed with the clarity of the new **BI-80**'s display at CES last month, and a student at our recent LC^4 camp happily used one all week, noting only that when used with his **BusCard II**, one Bus Card chip became so hot that he had to use a cooling fan on it. His display was quite clear on either a Zenith monochrome monitor or a 1702 color monitor. We are reporting his experiences, rather than ours, because we our unit was defective.

The **BI-80** occupies 8K of memory from $8000-9FFF, and adds BASIC 4 to your computer, along with the wider display. It works with other Batteries Included products, and has been tested successfully with the MAE assembler. Naturally, it can't work with other cartridges that require the same memory space. Connecting it is a very simple matter of plugging it in and re-routing the luminance connector to the monitor, using included cables. The adequate manual is largely devoted to listing the BASIC 4 commands, with one slight error in the syntax of the RECORD# example. One other undocumented feature is a brightness control inside the case. Decreasing it may improve clarity on monitors not designed for 80 column use, such as the 1702. We are now testing the 1 year warranty, and hope to finish our review next issue. -JS

Update (see #12,14,18): 80 COLUMN BOARD, $140 board for **64.**
80 column adapter from Data 20 Corporation.

This board produces a clear 80 columns, but whenever you POKE to the screen or scroll the display (i.e., massive screen POKEing), the display glitters. To some people, this may not be a noticeable problem, but I could not stand it. Another disadvantage is that since the Data 20 board doesn't use 8032 screen edit commands, you won't be able to convert 8032 software over to the 64 as easily as you could if the commands were available. I would recommend you purchase this board only if you buy the software packages available for it. -Mark Niggemann

Interfaces:

THE BUSCARD II, $200 cartridge for **64.**
IEEE488 to serial interface from Batteries Included, 186 Queen St. West, Toronto ONT M5V 1Z1 CANADA 416/596-1405.

After experimenting with 4 other IEEE interfaces for the 64 (Skyles, DAMS, Link, and MSD-CIE) I've become something of an expert on what works and what doesn't - rather, they all work, but have their limitations - except the **Buscard.** Once it's plugged in, you can forget it; it doesn't interfere with any program I have. Additionally, it gives you BASIC 4.0 with one SYS call, and a monitor with another. Unfortunately these latter may interfere with some machine language programs, but if they do, you just turn them off. I don't use the monitor much, but have become addicted to BASIC 4.0 with my 4040. It's so convenient: once you've tried it, you'll never want to go back to the wedge, much less to "OPEN 15,8,15:PRINT#15,"whatever. Type CATALOG and you get the directory of disks in both drives; you interrupt and resume scrolling by hitting the space bar. Or if you type cA--like anywhere else in Commodore BASIC, SHIFTing the second letter of a keyword works as well as typing the whole thing. There is ONE little bug when using the **Buscard** with the **MSD dual drive:** when requesting a CATALOG, one cannot rely on the number of "blocks free" specified, and a long directory may not all be listed. (On my **Wordpro** file disks--only 60 lines or so will be listed, and the "blocks free" message may be from the last disk directory requested, not the current one.) I don't know whether the culprit is the **Buscard** or the **MSD dual drive,** but it doesn't happen with the 4040. -James K. Condon

MODEMs:

1650 AUTOMODEM, $100 cartridge for **64** or **VIC.**
300 baud MODEM from Commodore, 1200 Wilson Dr., West Chester PA 19380.

At last, a MODEM which you don't have to use with a telephone handset for "direct connection." This MODEM allows you to plug into a modular connection wall plate. Includes a 25 page manual with full illustrations. Also includes a modified version of **64TERM** to work with the Auto Dial and Auto Answer. The documentation is rather sparce on telling you how to dial and detect a carrier signal from a program, but there is a program in the back. Despite the usually poor documentation from Commodore, this MODEM is very good if you are a lazy person like me or if you are serious on setting up a Bulletin Board. If you can't afford it, **VICModem** is a better buy. Recommended for those who have a true need. -Mark Niggemann

Monitors:

GORILLA MONITOR, $100 monitor for **64** or **VIC.**
Monochrome monitor from Leading Edge, 225 Turnpike St., Canton MA 02021.

A low cost 12" green screen monitor. Has a very low glare screen coating making it very nice on my eyes. The characters from the 64 are very crisp and clear. The screen itself does not distort to a noticable degree. With the luminance pin hooked up instead of composite video, you do get a finer picture. Contrast and Brightness are located nicely on the front. It works with Data 20's 80 column board very nicely. Only thing wrong with it is that it doesn't have sound (but I use my stereo). Recommended for those who hate fuzzy pictures. -Mark Niggemann

Other:

MAGIC VOICE, $70 "box" for **64.**
Speech synthesizer from Commodore, 1200 Wilson Dr., West Chester PA 19380.

Well, Commodore's long-awaited speech module for the 64 is finally out. As promised, it speaks in a female voice more lifelike than most synthesized voices, but also limited to its pre-programmed words. It is used by typing say instead of print before each word it should speak (each word, not each phrase), or by telling it to say a word by its number, from 1 to 234. The price is right, and it will tie in with some Commodore programs, such as **Wizard of Wor**, but **Commvoice** and **Type 'n Talk** are more flexible. Though an improvement over the sound of these competitors, **Magic Voice**'s vocal quality still isn't good enough to fool anyone, and I'd rather have simple, fully-flexible operation than lower cost and limited vocabulary. Others, of course, may see it differently, and prefer **Magic Voice.** -JS

THE MICRON EYE, $300 camera for **64.**
Digitizing camera from Micron Technology, 2805 E. Columbia Rd., Boise ID 83706.

Though we'd hoped to do a formal review of this most interesting product, I've thus far had to settle for a brief inspection and demonstration by two of the students at the recent LC^4 camp. The **Micron Eye** is a small camera on a table-mount tripod. Inside its lens is a light-sensitive memory chip. A short flat cable connects the camera to a long L-shaped cartridge that plugs into the 64. Using included software, it is fairly easy to copy somewhat detailed views of common objects on the display screen, from various distances. The package also allows simulation of gray scales on nonmoving objects. Since the memory chip's active surface is not square, the programming corrects for distortions in the 256 by 256 pixel photo matrix, and also stretches and crunches the result until it fills a standard 200 by 320 pixel hi-res screen. Then the picture may be saved to disk or printed out (the students used an Epson printer.) It may also be loaded back from disk into **Flexidraw** (reviewed in M#18 & 19) for editing. Unfortunately, the distortions in the picture shape are evident when loaded into **Flexidraw**, as is a small horizontal line representing a zone on the memory chip with no active elements.

Though I wasn't able to use the camera on my own, my students were enthusiastic about it, and would recommend it. If I had one, I'm sure we could use it to prepare the Midnite, and $300 is quite a reasonable cost for a digitizing camera. Now that it is known such a product can succeed, one only hopes that Micron is busily designing a memory chip with a square and uninterrupted active surface. -JS

Update (see #18) S.A.M., by Don't Ask. $69 diskette for **64.**
Voice synthesizer from Tronix, 8295 S. La Cienga Blvd., Inglewood CA 90301. Not protected.

A very low priced voice synthesizer that produces a very remarkable voice. It has a **Type 'n Talk** option that makes it very easy to program. The demo program even sang the national anthem. The voice is all handled in software, so you don't need any additional hardware. It takes advantage of sound capabilties of SID very nicely. I have a friend who owns the Atari version and he is envious of my 64 creating a better voice than his. Recommended over hardware that sells over twice the price. -Mark Niggemann

Compilers

BLITZ, $99 diskette? for **64.**
Compiler from Skyles Electric Works, 231 E. South Whisman Rd., Mountain View CA 94041. Supports 1-2 disk drives.

I have purchased **Petspeed, Instaspeed, JOU Compiler, Basm** and **Blitz.** At this time I like **Blitz** best, with **Petspeed** a close second.

Written in Germany, **Blitz** is a 2 pass compiler (it scans your BASIC program twice while compiling it into P-code). **Blitz** compiles a program faster and in more compact code than **Petspeed.** Both will compile "off-the-shelf" programs, without having to modify the code. In addition, **Blitz** will allow BASIC extensions and permits the use of integer variables! **Blitz** also uses a smaller run-time library; **Blitz** uses a 23 block library; **Petspeed** uses one 33 block library. I compiled a test program (60 blocks long) using both compilers; **Petspeed** compiled it in 26 minutes [filling] 96 blocks; **Blitz** compiled it in 12 minutes [filling] 74 blocks. -John R. Olsen Jr. (in Northwest Users Guide)

INSTA-SPEED, $100-120 diskette? for **64.**
Compiler from Cimarron, 666 Bake St., Suite 319, Costa Mesa CA 92626. Dongle-protected. Anti-warranty.

REVIEW #1: Originally sold for the PET as **DTL Compiler. Instaspeed** is best used when you are writing your own programs and can take advantage of its BASIC extensions. This is a 2 pass compiler that does not append the run-time library to the P-code. The compiled program is loaded as a BASIC program. When executed, it accesses the disk drive and loads the run-time library before executing your code. The compiler comes with a detailed 42 page manual. -John R. Olsen Jr. (in Northwest Users Guide)

REVIEW #2: It's not that bad. The code generated runs much faster than normal BASIC. When I compiled the 1541 BACKUP program, it ran almost 3 times faster. Another advantage is that it allows you to incorporate machine language extensions to BASIC very easily. However, **Insta-Speed** is not really a compiler, because it doesn't generate machine code; it's really a pseudo-code (P-code) interpreter. What it does is crunch BASIC code down in size and let constants and variables be represented in true binary format. It also has all variable locations pre-defined and very little time is spent on variable searches. Strings have also been improved. Garbage collection is very rapid. It is a good product and there is an option to add a security key for protection. Recommended. -Mark Niggemann

JOU COMPILER, $30 diskette? for **64.**
Compiler from JOU Laboratories, 2116 E. Araphao, Suite 371, Richardson TX 75081.

This single pass compiler was originally written in BASIC and compiled itself; it has many limitatons. For example, a subroutine must occur before the GOSUB, or within the first 19K of the program. Also you cannot GOTO or GOSUB to a line immediately following a REM or DATA statement. But if you can live within such restriction, this is an inexpensive compiler you might like. -John R. Olsen Jr. (in Northwest Users Guide)

BASM, $100 diskette? for **64.**
Compiler from Computer Alliance, 21115 Devonshire St., Suite 132, Chatsworth CA 91311.

It was one of the first compilers available. Actually, it is not exactly a BASIC compiler. You use a special language that is a combination of BASIC and assembly language. All is carefully explained in a large and detailed manual, along with many examples. This compiler is strictly for poeple who write their own software. But for someone who is willing to learn a new hybrid langauge, it can produce exceptional results. -John R. Olsen Jr. (in Northwest Users Guide)

High Level Languages:

Update (see #15,16,18): COMAL Version 0.14, $20 diskette for **64.**
Structured language from COMAL Users Group, 5501 Groveland Terrace, Madison WI 53716.

At last! The public domain version of COMAL for the 64 is here! It is chuck full of stuff, starting with the COMAL Kernal as defined in the standard. You have commands for sprite, hi-res and turtle graphics. Since the turtle graphics has most of the CBM LOGO commands, many LOGO programs can be effortlessly converted to work in COMAL. Programs have about 10K of free memory on diskette, while the COMAL cartridge will leave about 30K free free. I like COMAL mainly for it's sprite commands and because it looks so much like Pascal. Recommended until the cartridge is out. -Mark Niggemann

Update (see #15,16,18): KMMM PASCAL version IV.4A, $95-100 diskette for **64.**
Structured language compiler from AB Computers, 252 Bethlehem Pike, Colmar PA 18915.

Greatly enhanced over earlier release versions. It includes a complete Pascal, except for SET, WITH, LABEL, GOTO and Variant Records, with a few restrictions. For example, structured types are not allowed in a RECORD, and you have array limitations of 256 elements in a single dimension. The best part is that it generates true 6502 machine code, rather than the P-code of other systems. When I ran a few benchmarks, some code ran 10-20 times faster than BASIC and 2-3 times faster than PETSPEED compiled BASIC. It took under 5 minutes to have a program compiled and ready to run! There are a few bugs, but the authors are constantly updating their program, and they provide very good support. If you are dependent on Pascal as I am, you will find this one worthwhile. Highly recommended. -Mark Niggemann

OXFORD PASCAL, by Niklaus Wirth. $50 diskette for **64**/$30 cassette for **VIC.**
Structured language from Oxford Computer Systems.

Oxford Pascal (also called Limbic Pascal) is a superset of ISO standard Pascal. It has the features expected in a complete Pascal, plus a number of extensions. It is a p-code compiler, and in benchmarks, runs at least twice as fast as interpreted BASIC. The documentation says Oxford can handle 6000 line Pascal programs without chaining, a claim I haven't tested. You can test and compile a procedure (subroutine), and later link it to a larger program. Oxford programs are normally run from the Oxford editor, but you can make a program run from BASIC with the Locate command, [which] does clear any source from the editor. In the one check of this file type, it added 11K of code. Resident programs, compiled programs and BASIC runnable programs appear to have the same execution time. I never expected so professional a Pascal implementation on a home computer. The only complaint I have is the documentaton, which potentially is good, but full of typographical errors. [Otherwise,] I wholeheartedly recommend this version of Pascal. -David Myers (in Hardcopy)

Preview: NEVADA COBOL, $60 diskette for **64** with **CP/M** cartridge.
File-handling language from Commodore, 1200 Wilson Dr., West Chester PA 19380. Not protected.

This language is for the Commodore CP/M board. It does work very nicely and is fairly complete for a microcomputer version of COBOL. Since I'm not the greatest fan of COBOL, I'd recommend this version only if you already own the CP/M card and like to suffer the agonies of COBOL programming. -Mark Niggemann

COMMAND PERFORMANCE, frequency unknown. $12/10 issues, for **all models.**
Magazine from USCUG, Box 2310, Roseburg OR 97470. Group membership (including newsletter), $20 per year.

The U.S. Commodore Users Group claims to be the largest U.S. user group, with 5,176 regular and 3,122 associate members, a claim I can't evaluate one way or the other because I'm not quite sure who they are. "The Prez" for instance is mentioned frequently throughout the review copy of their newsletter, but never identified by name. I have difficulty recommending an anonymous resource, even though many of those whose articles are reprinted in the newsletter are well known to me.

On the other hand, the group seems to be serious about reviewing products, putting tested programs through a well-defined process at the hands of several reviewers before approval. The best ones are voted on by the group's executive committee and some endorsed by it. Endorsement means the product is warranteed by USCUG in addition to the supplier, though I couldn't find any statement of what practical value the USCUG warranty might have for the purchaser. I also had the impression that approved and endorsed products could be ordered through USCUG, though I can't find the reference now. That illustrates my second real complaint about the newsletter--it is an unorganized newspaper, printed on newsprint, with articles scattered at random and no index.

Although the group says it doesn't print reviews of bad products, it suggests members ask about them directly, and publishes occasional company names in a "black sheep pen" reserved for those with highly questionable wares. (This month's honoree is U.S. Technology.) I approve their warning about troublemakers, and would only like to know more about the specific complaints involved. A quick review of USCUG's current list of recommended products shows 2/3 were also approved by Midnite reviewers, the rest (except for a very few we've not seen) not recommended by our reviewers. Overall, **Command Performance** is a very interesting effort, with many good features. We'll hope to look at it again in a few months, after we know more about its organizers. -JS

LINK UP, $24/year for **all computers with MODEMs.**
Monthly magazine from On-Line Communications, 3938 Meadowbrook Rd., Minneapolis MN 55426.

A neophyte magazine devoted to communications and the small computer. Link Up covers equipment, software and the different systems available to users. Serious telecommunicators will enjoy this, as it discusses the future of this exciting hobby. The user information alone makes this one of the most informative on the market today! If you spend much time on pay services, you'll really enjoy this. Recommended. -Mike Stout

THE SOFTWARE JOURNAL, Monthly. $15/year for **all computers?**
Small newspaper format from The Software Journal, Suite 42127, 600 First Av, Seattle WA 98104. 24p.

Though arranged to look like the Wall Street Journal, including the categorized one-sentence summaries in the middle columns of the front page, the contents of the Software Journal bear no resemblance to any reputable news publication. This journal consists almost entirely of press releases and ads, with only one (forgettable) article and apparently no independently-written news at all. I can't imagine why anyone would pay money to read press releases. Not recommended. -JS

Update (#18): The TRANSACTOR, November 1983 issue.

UPDATE #1: The [Nov. 1983] issue is a complete compendium of memory maps, graphs, screen charts and other inside information on VIC, 64 and PET. I predict this will be the most-Xeroxed magazine issue in history. -Colin Thompson (in The Users Port)

UPDATE #2: At the recent TPUG Copyfest, it was respectfully referred to as the "Brown Bible." Editor Karl Hildon hopes to publish an updated book version this fall. -JS

Modem Reviews

ELECTRIC MAGAZINE, Version 3.1, $40 diskette for **64** and **1541**.
BBS from D. & B. Software, P.O. Box 2154, Columbus MO 39704. Unprotected.

REVIEW #1: This BBS will operate on a 64 and 1541 disk drive. Version 3.1 lacks the most important quality of any BBS, a download feature. However, the company has promised a new version that will include downloading and a few more features. **Electric Magazine** would make a nice little message board, but it lacks the quickness needed to keep my attention. I'll wait for the next version before I'd recommend this one. -Mike Stout

REVIEW #2: One of the best features of Electric Magazine is its support from author Bob Shannon. An excerpt from the latest issue is in Copyright Notes this time, and that issue also tells how to compile E.M. to get the speed Mike wanted in his review above. -JS

Update (see #18): TELSTAR, $50 diskette for **64**.
Terminal program from Eastern House Software, 3239 Linda Dr., Winston-Salem NC 27106. **CBM/PET** version called **STCP**.

A very complete and capable terminal program. You can download and upload files to mainframes. I have been using it to communicate with a VAX 11/780 Super-Mini computer, and I have been very satisfied with its performance. It has a very nice, easy to use menu. It works with the the VICModem and the 1650 AutoModem; with AutoModem, you can Auto Dial and hang up via a menu selection. Without reading manual, it took me over 6 hours to learn the commands, but the manual was very helpful. One bug I noticed was that time keeping was not accurate during uploading or downloading. If you do a lot of telecommunications with non-PBBS systems, this cartridge is a worthwhile investment. Recommended. -Mark Niggemann

Update and preview: PUNTER'S BBS vs. the RAVICS BOARD:

The club is going to put up a BBS system. I have two BBS programs that look very promising, plus one of my own. The Ravics board looks to be the best one for the 64. I haven't seen anything better running on the 64 to date. The other board I have is Steve Punters, which I personally don't like as much. It is too hard to operate at the users end, and requires a lot more work on my part. -Dale Wentz

Utility Reviews

Disk Aids:

Update (see #18): CANADA A/M and CLONE MACHINE

I have the **Clone Machine** and **Canada A/M.** Neither will copy itself. **Canada** has faithfully produced a working copy of everything (including **Clone Machine**) I've fed it; **Clone Machine** has not. On the other hand, **Clone machine** is actually several different programs which allow you to make specific and limited changes to a disk, rather like **DISK I.C.U.**, and you may learn something and enjoy yourself in the process, whereas **Canada** is a "set it and forget it" program that simply does its job. Both are useful; if you simply want copies, use **Canada**, but if you want some control of the copying process, use **Clone.** Both are DOS protected and will load only with the 1541. -James K. Condon, MD

Graphic, Music and Sound Aids:

CHARTPAK 64, $43 diskette for **64.**
Bar graphs from Abacus Software, P.O. Box 7211, Grand Rapids MI 49510 (616/241-5510).

Chartpak 64 makes the most sophisticated bar graphs of any program I have seen. Each bar can be segmented, and for emphasis, each segment striped in different directions or dotted. Other programs such as **Graphics Assistant**, offer only solid black bars. It, too, has a selection of pie and line graphs, as well as vertical or horizontal bars, and the shape of charts can be varied. It can also incorporate **Busicalc** files. Though the program is excellent, the manual is not. Unlike the plastic binder and clear instructions of **Graphics Assistant**, the **Chartpak** manual consists of flimsy cardboard and the instructions, in tiny print, are most difficult to follow. I spent a half hour trying to call up some of the demo charts. I recommend it, however, for those who have the time to fathom the instructions, and recommend that Abacus read the **G. A.** manual to learn how one should be written. -Elizabeth Kaspar

PAINTBRUSH, $15-20 cartridge for **64.**
Drawing aid from Hesware, 150 North Hill Dr., Brisbane CA 94005. Requires joystick.

An inexpensive cartridge that allows you to draw pictures on your color monitor using your joystick. So much for the good news. It comes complete with a 1 page instruction sheet (small size paper) printed front and back, and a demo tape. The cartridge offers 9 paintbrush widths, the ability to save or load pictures on tape or diskette. You can draw and erase lines (often when you don't want to), protect or unprotect a color, clear the screen, or fill an area with color. There are no pre-defined shapes, no commands to move a shape, replicate, rotate, or otherwise process pieces of your picture, nor is there any magnify function to facilitate detailed work. My experience trying to use **Paint Brush** was frustrating at best. Conclusions? Another fine HES product. If anyone out there is feeling masochistic, I will gladly sell my cartridge to you for $7.50. Good luck. -Valerie Kramer (in SFVCUG Users Port)

For reviews of the following hardware products with programs, see Hardware Reviews.

MAGIC VOICE, speech synthesizer from Commodore.
MICRON EYE, digitizing camera from Micron Technology.
S.A.M., speech synthesizer from Tronix.

Programmer's Aids:

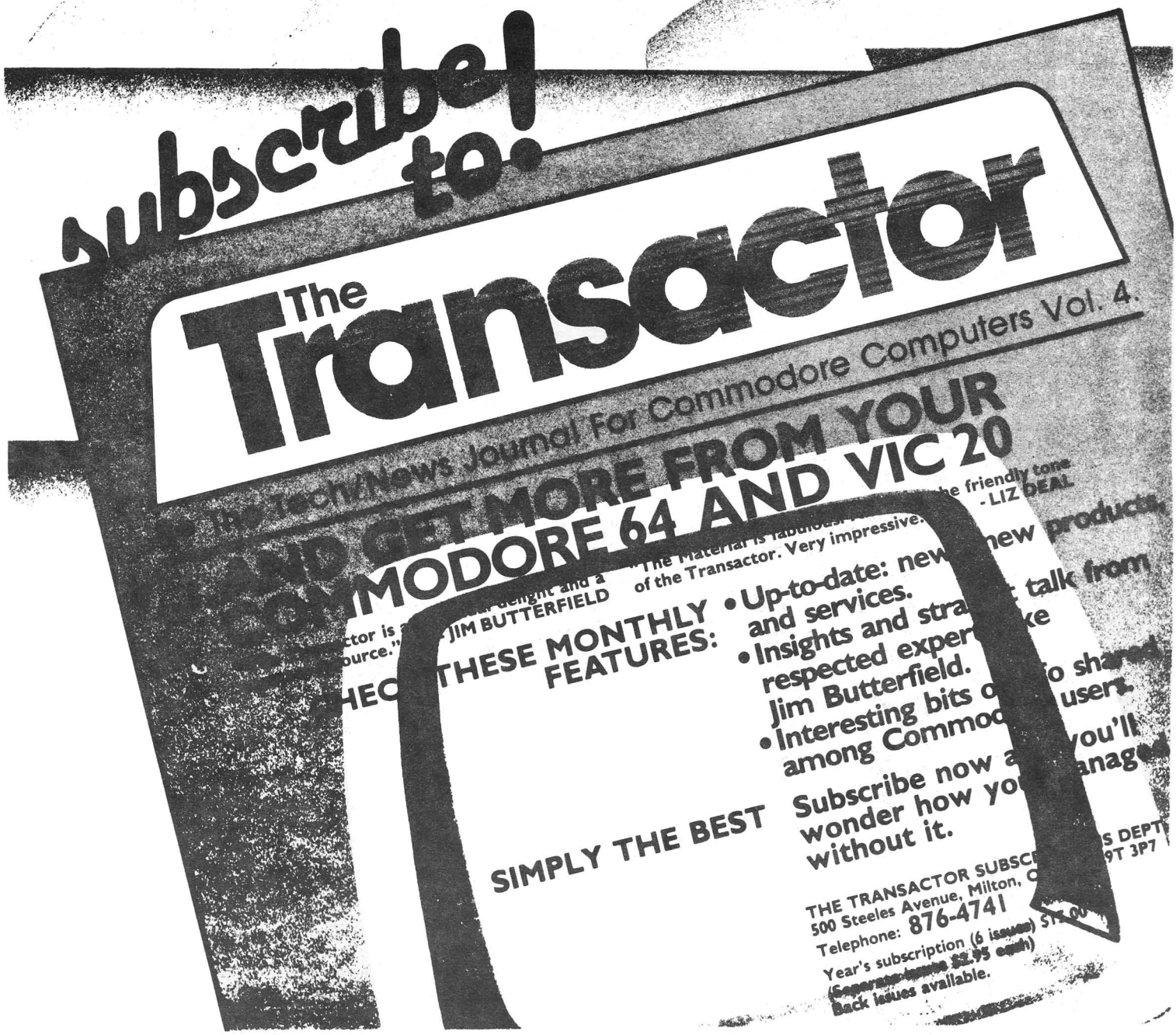
ARROW, cartridge for **VIC** or **64** (Also available for **PET**).
High-speed cassette interface, from Skyles Electric Works, Mountain View CA

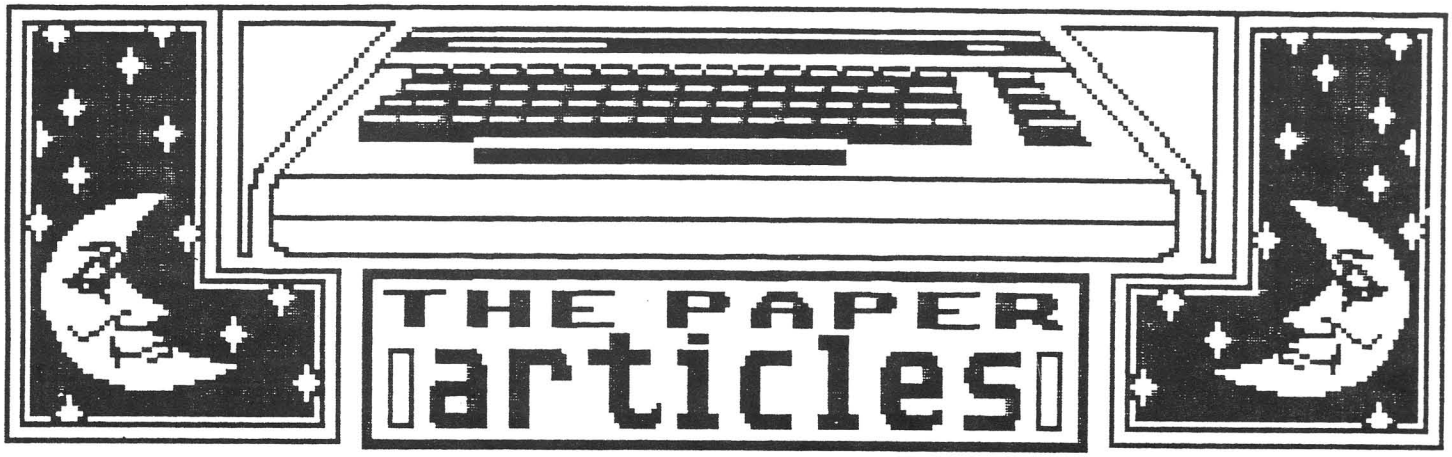
Skyles advertises this program as 6 times faster than normal, and that's exactly what I found, regardless of the length of the program. It also has Auto, Delete, Search and Replace, Append, and a machine language monitor, extended with transfer and compare commands and a hex/decimal converter. A special feature positions the tape at any of 10 preset locations, by counting the time the player fast-forwards after being fully rewound. **Arrow** is quite useful for those sick of waiting, who can also benefit from permanent utilities. -Jim Toblas (in NYCig)

SUPER BASIC 64, $40 from RTC

Super Basic adds all the BASIC 4 commands to the 64 and (unlike other BASIC 4 upgrades) also has 4.0's fast garbage collection! If you have ever stared at the screen for half a millenium, you will appreciate never having to wonder whether it has crashed. Will save a million dollars worth of anxiety. -B. Prouty (in Comm'Putoy Cult)

MORE THAN JUST THE TIP





DOODLE GRAPHIC BY WAYNE SCHMIDT

Feature Article:
MIDNITE MUSINGS

FREE SOFTWARE & INFORMATION!

by John Wilson

That title is sure to get every reader's attention! Thousands of computer hobbyists are eager to learn all they can about the world of computing. Most learn from publications and user groups, but others take the easier route. Some users have picked up the habit of calling authors of magazine articles and user club officers to seek software and information about our hobby free of charge.

Ma Bell has done a good job of impressing people to use the telephone first. The problem is that some use the phone exclusively. What's an easier and cheaper way to get answers than a phone call to the local users group president? After all, talking to them on the phone for an hour isn't asking too much, is it? WRONG! One hour every night, two or three times a night makes this whole thing ridiculous. User club officers aren't compensated for their work and in many instances spend their own money assisting the club. Listen to these jewels I was recently confronted with on the phone:

1) If I purchase four VICMODEM's, will I have 1200 baud?
2) Can I borrow some of your copy-righted programs to test my new copying program?
3) Which wire should I cut on my 1541 disk drive to change the device number?

Most user club officers are involved because they love the hobby and contribute out of the kindness of their hearts, but one persistent caller can ruin it for the sensible majority. This charitable officer could someday become fed-up and drop out of club activities. When your car breaks down, do you expect the service station to tell you how to fix it? How many attorneys hand out free legal advice? Some will say that club officers aren't experts, but why then are you calling them? Apparently they know something you don't. The next time one of those usual pests call me, I'm going to ask that person to come over and cut my grass or wash my car. A deal like that would seem very fair to me; both parties get something needed.

This article isn't directed to the majority of the users in our hobby. I enjoy talking to our members occasionally, because I can use their input. But to those who constantly cause me and others headaches, use some common sense! If you don't, then someday you'll hear, "The number you have dialed has been disconnected!"

[EDITOR'S NOTE: If you really need help from an expert in your club or elsewhere, and they don't seem eager to spend as much time on your problem as you would like, offer to pay them for their time!]

Feature Article:
BASIC HINTS

QUICK DISK LOAD FOR BASIC 4.Ø

by Ross Garber
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Suffern NY 1Ø9Ø1

Over the past few years, my program library for the PET/CBM has grown to about 25ØØ programs. Although I can usually remember where specific programs are located, I forget the filenames. Instead of calling a directory (also known as a catalog), and then having to re-type the file name again in the DLOAD command, I use the following procedure.

WHAT YOU DO:

Just as in BASIC, the colon (:) will separate commands so that they are processed individually. I put a colon at the end of a filename in the directory. When I spot the name, I press run/stop, position the cursor in front of the entry, type DLOAD, and press RETURN. This saves having to type out the filename, but there are two problems. First, what about the filetype description following the filename? Won't that cause the computer to respond with SYNTAX ERROR? No... When the computer performs any LOAD command, the input buffer is emptied; therefore, the filetype description is cleared from the buffer, and the computer never sees it. Secondly, if the colon is part of the filename, it must appear on the inside of the quotation marks so it will not be interpreted by the computer as a command. Well, there is a way to position the colon on the outside of the quotes...

Let's say that we have a file by the name of "midnite." Using the RENAME command we will suffix the filename with the colon in a special way. Here is how:

RENAME "midnite" to "midnite _:" (return)

The _ symbol stands for hard space or shifted space (while holding down the shift key, press the space bar). Now if we were to call the directory, the filename will appear as:

XX "midnite": PRG

WHY IT WORKS:

How was the colon (:) moved outside the quotes? When the disk drive stores a file on a diskette, the body of the file is stored in a certain area of the diskette, and the name of the file (seen when a directory is called) is stored in another special area, called the directory track. The format in which the name is written to the diskette is as follows. The first byte tells what type of file this is. The second and third bytes tell where to find the body of the program. From the fourth byte on is the filename, letter by letter. When the name is completed, the disk drive puts the value of 16Ø (decimal) in the remaining bytes of the filename entry.

Now, when a directory is called, the disk drive skips over the first three bytes, and starts printing the name. When it finally comes upon the value of 16Ø, it prints the close quotes, and keeps reading the next few bytes until it finds the next filename.

Here is where the shift takes place. The ASC value of a hard space is 16Ø (decimal). When we renamed the file to contain a hard space (ASC value of 16Ø) and a colon, the disk drive tries to read this entry. It prints the open quotes and the name, but when it sees a value of 16Ø, it assumes that this is the end, and prints the close quotes. But since there is still the colon to be displayed, it now prints the colon on the outside of the quotes! Voila!! This is how your DLOAD should look:

DLOAD "midnite": PRG

Feature Article:
ADVANCED BASIC

PROGRAM TO SEQUENTIAL FILE

by Alfred D'Attore
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Phoenix AZ 85021

On page 19 of issue 17 of the Midnite, a small set of commands were given for changing a BASIC program into a sequential file:

```
OPEN8,8,8,"Ø:LETTER,S,W"
CMD8:LIST
PRINT#8
CLOSE8
```

I use a Petspeed version of **Papermate6Ø** for my work at Dysart High School in Peoria, Arizona. I find the program altogether admirable as a teaching tool. It is capable, fast, flexible and easy for students to learn. **Papermate**, of course, uses sequential files, and while the short program given above will allow a successful "load," the resulting text is anything but optimum for use in writing lesson plans -- or even articles, for that matter. So I wrote a program that would automatically:

a. Write a sequential file, in "caps" if so required.
b. Put in acceptable word descriptions for the various editing commands.
c. Put in the necessary force to next line " ," required in **Papermate.**

Although written for the CBM 8Ø32, the following program has been tested successfully on the Commodore 64, and I can see no reason why it would not work on any Commodore system.

The program is straightforward. Pointers are read for program start (line 15Ø) and respective line starts (line 17Ø). Line numbers are read next, translated to decimal and thence to strings (line 18Ø), and a space is added. Each character is then examined individually, and tokens are translated and inserted as required. Some additional logic accommodates frequently expanded lines. To resolve ambiguities between tokens and screen editing commands, editing commands only appear in quotes (line 21Ø). Line 34Ø makes any requested "caps" translations. The program then saves the adjusted file to the same disk drive from which it is derived, with an ".s" suffix. Since my Petspeed version of **Papermate** permits only 165 lines of text, a large program can be broken into as many as 3 different units.

Since this program carries both "translated" editing commands and those presented in "prose" (in DATA statements), some ambiguity might creep in if the reader is not careful when copying it. Only those commands given in quotes should be translated to screen editing commands. The rest (in DATA statements) should be copied as is, as words. Lines 72Ø and 73Ø contain editing commands (also in DATA statements) that need translating.

I have a Petspeed version for CBM 8Ø32 and 4Ø32 users, which works very swiftly indeed. However, if you use the BASIC version listed below, have a cup of coffee while you wait. The results will be slow in coming, but worth it.

```
1Ø DIM L$(45Ø),R$(18),T$(1Ø4)
2Ø FORI=1TO1Ø4:READT$(I):NEXTI
3Ø FORI=1TO18:READR$(I):NEXTI
4Ø INPUT"(CLR)FILENAME";FT$
5Ø INPUT"(DOWN)DRIVE NUMBER  Ø (LEFT)(LEFT)(LEFT)(LEFT)";DN$: FS$=DN$+":"+FT$"+,S,P"
6Ø INPUT"(DOWN)CAPITALIZE  Y (LEFT)(LEFT)(LEFT)(LEFT)";YN$:YN$=LEFT$(YN$,1)
7Ø INPUT"(DOWN)FOR PAPERMATE  Y (LEFT)(LEFT)(LEFT)(LEFT)";NY$: NY$=LEFT$(NY$,"1)
8Ø REM *** READING PROGRAM
9Ø PRINT:OPEN1,8,8,FS$:M=Ø:U=1
1ØØ GOTO15Ø
11Ø GET#1,G$:IFG$=""THENG$=CHR$(Ø)
12Ø Z=ASC(G$)
13Ø GET#1,G$:IFG$=""THENG$=CHR$(Ø)
14Ø Z=Z+256*ASC(G$):RETURN
```

```
150 GOSUB110:X=Z
160 M=M+1
170 GOSUB110:Y=Z:IFY=0THENS=M:GOTO450
180 GOSUB110:L$(M)=MID$(STR$(Z),2)+" "
190 PRINTL$(M)SPC(8-LEN(L$(M)));:FORN=X+4TOY-2
200 GET#1,G$:IFG$=""THENG$=CHR$(0)
210 A=ASC(G$):IFA=34THENU=-1*U:L$(M)=L$(M)+CHR$(162):GOTO370
220 IFA<65ORA>90THEN250
230 IFYN$="Y"THENA=A+128
240 L$(M)=L$(M)+CHR$(A):GOTO370
250 IFA<128THEN290
260 IFU>0THEN280
270 IFA=145ORA=146ORA=147ORA=148ORA=157THENA=A+74
280 A=A-127:G$=T$(A)
290 FORK=1TO9:IFG$<>R$(K)THEN320
300 G$=R$(K+9)
310 K=9:NEXTK:GOTO330
320 NEXTK
330 Y$="":FORZ=1TOLEN(G$):F$=MID$(G$,Z,1):A=ASC(F$)
340 IFYN$="Y"THENA=A-128*(A>64ANDA<91)
350 Y$=Y$+CHR$(A):NEXTZ
360 L$(M)=L$(M)+Y$
370 NEXTN:GET#1,G$:X=Y
380 IFLEFT$(L$(M),1)=" "THENL$(M)=MID$(L$(M),2):GOTO380
390 IFLEN(L$(M))<77THEN430
400 L$(M+1)=MID$(L$(M),77)
410 L$(M)=LEFT$(L$(M),76)
420 M=M+1:GOTO390
430 IFNY$="Y"THENL$(M)=L$(M)+"
440 GOTO160
450 CLOSE1:PRINT
460 REM *** SAVING SEQUENTIAL FILE
470 IFS<151THENR=1:F=S:BL$=".S":GOSUB540:GOTO720
480 IFS>301THEN510
490 R=1:F=INT(S/2):BL$=".S":GOSUB540:R=F+1:F=S:BL$=".S1"
500 GOSUB540:GOTO720
510 R=1:F=INT(S/3):BL$=".S":GOSUB440
520 R=F+1:F=2*F:BL$=".S1":GOSUB540
530 R=F+1:F=S:BL$=".S2":GOSUB540:GOTO720
540 PRINT"(DOWN)SAVING SEQUENTIAL FILE WITH SUFFIX: '"BL$"'"
550 S$="S"+DN$+":"+FT$+BL$:OPEN15,8,15:PRINT#15,S$:CLOSE15
560 FS$=DN$+":"+FT$+BL$+",S,W":OPEN1,8,8,FS$
570 FORI=RTOF
580 PRINT#1,CHR$(34);L$(I);CHR$(34)
590 NEXTI:CLOSE1:RETURN
600 DATA END,FOR,NEXT,DATA,INPUT#,INPUT,DIM,READ,LET,GOTO,RUN,IF,RESTORE
610 DATA GOSUB,RETURN,REM,STOP,ON,WAIT,LOAD,SAVE,VERIFY,DEF,POKE,PRINT#
620 DATA PRINT,CONT,LIST,CLR,CMD,SYS,OPEN
630 DATA CLOSE,GET,NEW,TAB(,TO,FN,SPC(,THEN,NOT,STEP,+,-,*,/," ",AND,OR
640 DATA >,=,<,SGN,INT,ABS,USR,FRE,POS,SQR,RND,LOG,EXP,COS,SIN
650 DATA TAN,ATN,PEEK,LEN,STR$,VAL
660 DATA ASC,CHR$,LEFT$,RIGHT$,MID$,GO,CONCAT,DOPEN,DCLOSE,RECORD,HEADER
670 DATA COLLECT,BACKUP,COPY,APPEND,DSAVE,DLOAD,CATALOG,RENAME,SCRATCH
680 DATA DIRECTORY,"(UP)","(OFF)","(CLR)","(SPC)","","","","","","","","","("LEFT)"
690 DATA "(CLR)","(DOWN)","(LEFT)","(RIGHT)","(UP)","(RVS)","(OFF)","(SPC)",""(DEL)"
700 DATA "(CLR)","(DOWN)","(LEFT)","(RIGHT)","(UP)","(RVS)"
710 DATA "(OFF)","(SPC)","(DEL)"
720 END
```

4040 ROM MEMORY MAP
SEE ICPUG JANUARY 1983

JOB QUEUE
$80-READ A SECTOR
$90-WRITE A SECTOR
$A0-VERIFY A SECTOR
$B0-SEEK ANY SECTOR
$C0-BUMP HEAD TO TRACK 1
$D0-JUMP STRAIGHT INTO MACH LANG CODE IN BUFFER
$E0-EXECUTE CODE IN BUFFER WITH HEAD,MOTOR ETC SET UP

NOTE: THE SECOND DIGIT IN THE ABOVE CODES IS THE DRIVE NUMBER!

FLOPPY DISK CONTROLLER ERROR CODES
NOTE:FIRST # IS FOR FDC-SECOND FOR IP
$01 -- OK

$02 20 HEADER BLOCK NOT FOUND - FDC HAS A LIMITED NUMBER OF TRIES TO FIND THE HEADER OF THE REQUESTED SECTOR.

$03 21 NO SYNCH CHARACTER DETECTED WITHIN TIME LIMIT

$04 22 DATA BLOCK NOT FOUND - ONCE FDC FINDS THE REQUESTED HEADER IT EXPECTS IT TO BE FOLLOWED BY A DATA BLOCK WITH BLOCK ID=07

$05 23 DATA BLOCK CHECKSUM ERROR - ONCE ALL DATA ARE READ INTO BUFFER, A CHECKSUM IS GENERATED AND COMPARED WITH THE CHECKSUM READ FROM THE DISK.

$07 25 WRITE VERIFY ERROR - A READ OF THE DATA WRITTEN IS PERFORMED AND COMPARED WITH THE DATA IN THE BUFFER.

$08 26 WRITE TO WRITE PROTECTED DISKETTE ATTEMPTED.

$09 27 HEADER BLOCK CHECKSUM ERROR - WHENEVER ANY HEADER IS READ A CHECKSUM IS GENERATED AND CHECKED AGAINST THE CHECKSUM ON THE DISK.

$0A 28 DATA BLOCK TOO LONG - THIS WAS INTENDED TO IDENTIFY THE FACT THAT THE DATA BLOCK HAD OVERWRITTEN THE NEXT HEADER BLOCK BUT DOES NOT SEEM TO BE IMPLEMENTED IN THE FDC.

$0B 29 ID MISMATCH - RETURNED IF THE IDS OF THE HEADER BLOCK READ DOES NOT CORRESPOND WITH THE ID GIVEN IN THE REQUESTED HEADER.

$10 24 BYTE DECODING ERROR - ONCE ALL DATA ARE READ INTO BUFFER, THE FDC CHECKS THE ERROR FLAG WHICH WILL BE SET IF ONE OR MORE BYTES WERE INCORRECTLY READ.

FLOPPY DISK CONTROLLER ROM ROUTINES

FC00-FC03 MAIN HOLDING LOOP AND ERROR ROUTINE VECTORS
FC04 "HOLD" ROUTINE FOR RESET ENTRY FROM INTERFACE PROCESSOR
FC09 'RESEt'-SET STACK POINTER, CHECK RAM, SET I/O CHIPS
FC54 MAIN HOLDING LOOP-START SCANNING QUEUE FOR JOB REQUEST
FC60 ...'JUMP' CODE ($D0) FOUND-SO GO AND DO IT
FC65 ...TURN DRIVE MOTOR ON & START TURN OFF DELAY
FC8A ...EXIT LOOP IF HEAD IS SETTLED ON CURRENT DRIVE
FC92 SCAN JOB QUEUE FOR ALL JOBS ON CURRENT TRACK
FCAC ...'BUMP' CODE ($C0) FOUND - SO GO DO IT
FCB3 ...ARE WE ON THE RIGHT TRACK? EXIT TO FCF4 IF WE ARE
FCBC ...NOTE JOB WHOSE TRACK REQUEST IS NEAREST CURRENT TRACK
FCD3 LOOP HAS GIVEN UP-WE'RE NOT ON TRACK OF ANY JOB SO...
FCE0 ...SET HEADS TO NEAREST TRACK REQUESTED AND GOTO FC54
FCF4 ON RIGHT TRACK, BUT IS DRIVE UP TO SPEED?
FCF8 IF HEAD & MOTOR OK, WORK OUT ZONE & NUMBER SECTORS ON TRACK
FD20 ...'EXECUTE' ($E0) CODE WAS FOUND SO GO DO IT
FD1A BUMP HEAD TO TRACK 1: FORCE HEAD IN MAX NUMBER OF TRACKS
FD3F LOOK FOR JOB ON QUEUE ON CURRENT DRIVE & TRACK AND NEAREST TO CURRENT SECTOR
FD9B ...FOUND ONE, SET POINTER TO ITS HEADER AND GO DO IT
FDA5 SUBROUTINE TO SET JOB PARAMETERS SUCH AS HEADER POINTER
FDBB FORCE CURRENT SECTOR TO REQUESTED SECTOR THEN GOTO FD3F
FDC4 IDENTIFY JOB REQUEST (READ, WRITE, & VERIFY)
FDC8 'READ' ROUTINE: FIND START OF SPECIFIED DATA BLOCK & READ BYTES INTO BUFFER. WHEN COMPLETE CHECK CHECKSUM AT FE6B
FDDD SUBROUTINE TO FIND START OF SPECIFIED DATA BLOCK...
FDF4 'WRITE' ROUTINE: CHECK WRITE PROTECT-ERROR #0B IF ON..SEARCH FOR SPECIFIED HEADER, WAIT ($049D) BYTES...
FE11 ...WRITE 3 SYNCH BYTES, DATA BLOCK ID (07) & WRITE DATA...WRITE CHECKSUM AND TERMINATE WRITE
FE4A ...TURN WRITE REQUEST INTO VERIFY, THEN GO TO FDBB
FE57 'VERIFY' ROUTINE: FIND START OF SPECIFIED DATA BLOCK...READ AND COMPARE WITH BUFFER-ERROR #07 IF MISMATCH
FE6B ...READ CHECKSUM ERROR #05 IF NOT OK
FE76 ...CHECK ERROR FLAG..ERROR #10 IF SET
FEB2 READ ANY HEADER BLOCK AND SET TRACK LOG FROM IT...CHECK FOR 'SEEK'($B0) REQUEST AND GOTO FEBC IF IT IS...OTHERWISE, COMPARE ID FROM DISK WITH ID FROM INTERFACE PROCESSOR
FEBC 'SEEK' ROUTINE: TRANSFER HEADER FROM DISK INTO HEADER TABLE
FECB ERROR #09 - CHECKSUM ERROR IN HEADER
FECF ERROR $0B - DISK ID MISMATCH
FED3 SUBROUTINE TO FIND SPECIFIED HEADER: SET RETRY COUNTER...READ FIRST HEADER AVAILABLE AND COMPARE WITH REQUEST...IF THEY DON'T MATCH, TRY AGAIN PRESET NUMBER OF TIMES
FF02 SUBROUTINE TO FIND ANY HEADER BLOCK - WILL TRY ONLY .X TIMES, ERROR #02 IF NOT FOUND AFTER .X TRIES
FF08 ERROR HANDLER: FLAGS ERROR IN JOB QUEUE, RESET STACK

```
      & GO BACK TO JOIN MAIN HOLDING LOOP AT FC54
      FF24        PART FF02 ROUTINE - WAIT FOR ANY BLOCK & IDENTIFY IT
      FF2C        SUBROUTINE: IDENTIFY SYNCH WITHIN .X CHARACTERS
      (USED BY HEADER ROUTINE ONLY)
      FF3E        SUBROUTINE: SEARCH FOR ANY BLOCK - SET TIME OUT
      DELAY...WAIT FOR SYNCH UNTIL TIME OUT OCCURS
      FF58        SUBROUTINE: TERMINATE WRITE MODE...RESTORE READ MODE
      FF79        SUBROUTINE: OUTPUT BYTE FROM .X
      FF82        'INTERRUPT' ROUTINE: SAVE .A & .Y RESET IRQ
      TIMER..INCREMENT IRQ COUNT IN $00 & THEN FOR EACH DRIVE
      FFBE        ...HANDLE TURN OFF AND UP-TO-SPEED DELAYS & SET FLAGS
      FFB7        ...HANDLE HEAD STEPPING
      FFEB        MASKS FOR HEAD AND MOTOR CONTROL BITS
      FFFC        RESET VECTOR - FC09
      FFFE        IRQ VECTOR -   FFB2

ZERO PAGE AND LOW MEMORY USAGE

      00          INTERRUPT COUNTER-USED TO TIME MOTOR TURN OFF DELAY
      01          MOTOR DELAY COUNTER FOR DRIVE 0
      02          MOTOR DELAY COUNTER FOR DRIVE 1
      03          DRIVE & HEAD STATUS FLAGS AND TRACK LOG FOR DRIVE 0
      04          DRIVE & HEAD STATUS FLAGS AND TRACK LOG FOR DRIVE 1
                  BITS 0-5 ARE TRACK LOG
                  BIT 6 IS HEAD SETTLED FLAG---(0 IF SETTLED)
                  BIT 7 MOTOR UP TO SPEED FLAG-(0 IF UP TO SPEED)
      05          NUMBER OF TRACKS FOR HEAD TO STEP FOR DRIVE 0
      06          NUMBER OF TRACKS FOR HEAD TO STEP FOR DRIVE 1
                    BITS 0-6 HOLD NUMBER OF TRACKS TIMES 2
                    BIT 7 IS DIRECTION FLAG (0 IF STEP INWARD)
                    NOTE: 05 & 06 ARE DECREMENTED OR INCREMENTED AS
      THE HEAD IS STEPPED AND ARE ZERO WHEN THE HEAD IS ON THE CORRECT
      TRACK
      07          TEMPORARY STORE FOR $40 DURING INTERRUPT ROUTINE
      08          CHECKSUM WORK BYTE..SMALLEST TRACK DIFFERENCE
      09          SMALLEST TRACK DIFFERENCE FOUND IN JOB QUEUE
      0A          DIFFERENCE BETWEEN CURRENT TRACK & TRACK IN JOB QUEUE
      0B          DIFFERENCE BETWEEN CURRENT SECTOR & SECTOR IN JOB
      QUEUE
      0C          SMALLEST ACTUAL SECTOR DIFFERENCE
      0D          IDH OF CURRENT HEADER BLOCK
      0E          IDL OF CURRENT HEADER BLOCK
      0F          TRACK OF CURRENT HEADER BLOCK
      10          SECTOR OF CURRENT HEADER BLOCK
      11          CHECKSUM OF CURRENT HEADER BLOCK
      12          CURRENT DRIVE NUMBER
      13          CURRENT TRACK NUMBER
      14          CURRENT SECTOR NUMBER
      15          NUMBER OF SECTORS ON CURRENT TRACK
      16/17       CURRENT BUFFER ADDR. (POINTS TO FIRST BYTE IN BUFFER)
      18/19       CURRENT HEADER ADDR. (POINTS TO FIRST BYTE IN HEADER)
      1A          CURRENT TRACK NUMBER USED DURING HEADER
      1B          UNUSED
      1C          UNUSED
      1D          RETRY COUNTER AFTER ERROR OCCURS IN HEADER
      1E          CURRENT JOB REQUEST CODE  (BITS 4-6 ONLY)
      1F          CURRENT BUFFER NUMBER
      20-3F       HARDWARE STACK
      40-4F       6522 VIA CHIP
      B0-BF       6530 RIOT CHIP (RAM INPUT OUTPUT TIMER)
      0400        IRQ TIMER CONSTANT (SETS NUMBER OF INTERRUPTS PER
      SEC.)
      0401        MOTOR TURN OFF DELAY CONSTANT
      0402        FLAG SET DURING RESET SEQUENCE TO TELL IP THAT FDC
      IS OK
      0403-0411   JOB QUEUE (INDEXED BY BUFFER NUMBER $00-$0E)
      0421-049B   BUFFER HEADER TABLE (CONTAINS IDH IDL TRK SEC CKS
      FOR EACH BUFFER $00-$0E)
      0499-049C   NUMBER OF BLOCKS PER TRACK IN EACH ZONE (SET UP BY
      IP)
      049D        HEADER GAP SIZE (SET UP BY IP)
      049E        INTER SECTOR GAP MINIMUM SIZE (SET UP BY IP)
      049F        DISK FORMAT IDENTIFIER   (SET UP BY IP)

      0500-05FF   BUFFER #0
      0600-06FF   BUFFER #1
      0700-07FF   BUFFER #2
      0800-08FF   BUFFER #3
      0900-09FF   BUFFER #4
      0A00-0AFF   BUFFER #5
      0B00-0BFF   BUFFER #6
      0C00-0CFF   BUFFER #7
      0D00-0DFF   BUFFER #8
      0E00-0EFF   BUFFER #9
      0F00-0FFF   BUFFER #A
      1000-10FF   BUFFER #B
      1100-11FF   BUFFER #C
      1200-12FF   BUFFER #D
      1300-13FF   BUFFER #E  NOT USED IN DOS 2.1 (WORKSPACE FOR IP)
```

Midnite Note: Mike Told of ICPUG is the original source. See User Group Notes for info on ICPUG.

The 4040 memory map was submitted by a member who wishes to remain nameless (says it is not his). The source is ICPUG, a group in England (?). Our anonymous donor came by it through a friend in Washington D.C. who got it through contacts made at the Strasma Lincoln University conclave last summer. Sounds like the pedigree of a particularly vile strain of the flu, doesn't it?

There are (bound to be) similarities with the 1541 drive. This is the kind of stuff that makes hackers orgasmic and laymen narcoleptic.

Feature Article:
LANGUAGES: CP/M

INTRO TO CP/M ON THE 64

by Mark Niggemann
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Ames IA 5ØØ12

CP/M stands for Control Program for Microprocessors. Its primary function is file management and program execution. Approximately 15,ØØØ programs run under CP/M, and hundreds of systems can support CP/M, because of the Basic Input Output System (BIOS), which acts as a bridge between the higher level functions of CP/M and low level, machine dependent Input/Output functions. The BIOS is different on every system. There is also a standard set of machine language subroutines called the Basic Disk Operating System (BDOS), which when used by programs, will work on all CP/M variant systems.

CP/M, version 2.2, and varies slightly on the 64. Most programs that run under CP/M expect a video display that is 8Ø columns wide, and must be modified to a 4Ø-column width on the 64. Currently you can purchase CP/M commercial software on Commodore disk format from Lifeboat Associates and from Commodore.

BUILT-IN CP/M 2.2 COMMANDS:

CP/M has some built-in commands used for lower level file maintenance. Any typed-in command is first checked against the list of built-in commands. If found in this list, then the command is executed. CP/M for the 64 uses DIR, ERA, REN, SAVE, TYPE, and USER.

WILDCARDS:

Wildcards allow you to represent single or groups of characters in a filename, and may be used with the DIR and ERA commands. The * wildcard allows you to substitute a group of characters. For example, if you type after the A>: **A>DIR TSTPRG.***
You will get these 4 filenames: **A: TSTPRG BAS : TSTPRG TXT : TSTPRG DOC : TSTPRG COM**
All files with the same name are printed out. You can do the same with the file type as well, and use the * as a fill character.
For example, typing this: **A>DIR DATA*.TXT**
could give you these 4 filenames: **A: DATAØ1 TXT : DATAØ5 TXT : DATA55 TXT : DATAØ9 TXT**

Another wildcard is the question mark (?), which can be used for a single character substitution in both the filename and file type. For example, you can type:
A>DIR TE?T.* and get: **A: TEST COM : TEXT TXT : TEXT DOC : TEST BAS**

DIR COMMAND:

The DIR command allows CP/M to print out a list of filenames on diskette. The list is the directory of files that have filenames and an associated file types. All directory listings are printed four across, in the order which they were saved or written to disk. You can use the wildcard feature above to print out a set of files with a specific filetype, all files on a specific disk, or a single specific file. Here are some examples of the DIR command. If you type: **A>DIR**
you could get:

```
A: STAT   COM : PIP    COM : SYSGEN COM : MOVCPM COM
A: FORMAT COM : LOAD   COM : ASM    COM : DDT    COM
A: SUBMIT COM : XSUB   COM : ED     COM
A>
```

DIR by itself prints the entire directory of the drive you are currently accessing. You can print the directory of another drive by typing DIR, one space, and the drive name (like "B"). To access the Commodore CP/M drive, you would type: **A>DIR B:**
and might see this:

```
B: CC     COM : MBASIC COM : PIP    COM : ED     COM
B: GUESS  BAS : NUMCNT COB : INSTR  DOC : ASM    COM
B: SUBMIT COM : XSUB   COM
```

A>DIR STAT.COM would print out single file entries of a specific drive.
A>DIR B:INSTR.DOC would print out a file on a different drive.

ERA COMMAND:

The ERA commands allows you to delete files from the directory. Care must be taken when deleting groups of files using wildcards, because if you delete any file accidentally, there is no way to retrieve it. You may specify the current drive or a different drive. Here are a few examples:

Typing: **A>DIR DATAØ1.TXT** gives you: **A: DATAØ1 TXT**

Typing: **A>ERA DATAØ1.TXT**

or gives you: **NO FILE**

A>DIR DATAØ1.TXT

To delete groups of files using wildcards, or the entire contents of the disk, you could type: **A>ERA *.*** and get this question: **ALL (Y/N)?Y**

The ERA command is asking if you want to delete the whole diskette; press Y for yes or N for no.

REN COMMAND:

The last built-in command is the REN command. It is used to rename files in a diskette directory. Once a file has been renamed, the new name is stored on the disk directory until renamed again or deleted. Only one file at a time can be renamed, and wildcards are not allowed. The format is: **A>REN NEWFILE.TXT=OLDFILE.TXT**

You can rename files on different disks, as follows:

Right Syntax:	Wrong Syntax:
A>REN B:NEWFILE.TXT=B:OLDFILE.TXT	A>REN NEWFILE.TXT=B:OLDFILE.TXT
or	or
A>REN B:NEWFILE.TXT=OLDFILE.TXT	A>REN B:NEWFILE.TXT=A:OLDFILE.TXT

The REN command is very handy, especially when using the ERA command to erase groups of files. If you want to save a file, you can rename it and delete the others using wildcards in the ERA command.

SAVE COMMAND:

The SAVE command is used in very special circumstances, to save the contents of RAM to disk. It's used a lot in assembly language programming, for instance, to save the object code, and is also used with the CP/M transcient MOVCPM command to modify the CP/M operating system. Before you can use the SAVE command, you must know the length of the program you wish to save, in 'memory pages' (of 256 bytes each). For example, if you have a 1 kilobyte (1K or 1Ø24 bytes) program, then the number of memory pages is: 1Ø24 bytes / 256 bytes = 4 memory pages. Since there are 4 memory pages for each kilobyte of memory used, and we want to save a 5K program named TEST.COM., the number of memory pages are 5 x 4 = 2Ø, and you would type: **A>SAVE 2Ø TEST.COM**

Even though the program is only 5K long, it will be stored on disk in 6K, because CP/M saves files in a minimum of 2K block allocations.

TYPE COMMAND:

The TYPE command allows you to print out the contents of any text file. These files are usually of file type .TXT, .DOC, .HEX, .PRN, or language source files. If you try to TYPE a nontext file, strange effects may occur, and wildcards are not allowed. Here is an example of TYPE: **A>TYPE TEXT.TXT**

Pressing CTRL/S will freeze or stop a long listing. You may resume the listing by pressing CTROL/S again, or terminate it by pressing any other key. To TYPE files on other disk drives, use the drive specification in front of the filename.

USER COMMAND:

The USER command allows you to define up to 16 specific areas on one diskette, each dedicated to a specific user. This does not mean that multiple users may use the same disk at the same time, because CP/M is a single user system. USER can be very useful, especially in an educational environment where several students must use the same diskette. When you first boot in CP/M, you are assigned to USER Ø. To go to another area, you would type: **A>USER 1**

When you go to another USER area, you lose all transcient commands (not described).

Feature Article:
MACHINE LANGUAGE

RAM DISK FOR THE SUPERPET

Using the 6502 Mode

by Allan Ackerman
3678 Nicole
Las Vegas NV 89120

PURPOSE:

This short routine, 184 bytes stored in the first cassette buffer, will allow the user to store large numerical arrays (13104 floating point numbers) in the auxiliary 64K RAM area of the SuperPet when using the 6502. The routine can be used unchanged with the **DTL BASIC** compiler and easily modified for the **Petspeed** basic compiler.

HOW TO USE IT:

First, you must set the SuperPET switch selections as follows:

1. The memory toggle switch must be set to R/W.
2. The microprocessor switch must be set to the 6502.
3. The UD12 switch set to RAM.
4. The UD11 switch set to OFF.

The program stores and retrieves data much like the disk relative record commands. First it sets a record number, and then performs a PUT or a GET with the USR function. The BASIC variable, in%, is assigned the record number. This variable must be the first variable defined in your BASIC program, because the machine code routine uses the start of variables pointer to locate it; it will always be 3 bytes away from this pointer. Next, execute a POKE 1,122:POKE 2,2 or POKE 1,156:POKE 2,2 in BASIC, which indicates whether a PUT or GET is to be performed. Finally X=USR(X) will store or retrieve the BASIC variable X, as demonstrated in the program, 'trivial example', shown below.

HOW IT WORKS:

A maximum of 819 floating point numbers can be stored in each of the sixteen 4K blocks of auxiliary RAM. When the USR function is called, the BASIC interpreter loads the argument of the USR function in the main floating point accumulator located at memory locations $5E-$63. Next, depending on whether a 122 or a 156 is poked into memory location 1, a jump to the PUT or GET subroutine is performed. Both the PUT and the GET subroutines immediately execute a subroutine called x5, to select the bank the data resides in and determine its actual address in the selected bank, by executing the following steps:

1. First the x5 subroutine locates the record number, in%, and stores this number in zero page, using the RND function workspace.
2. Next the subroutine performs the following two calculations:
   a. bank=int(in%/819) (desired 4K bank to select)
   b. new index=in%-bank*819 (index of the data in selected bank)
3. Then the new index is multiplied by 5, to give the actual location of the data in the desired bank, and stored at memory location $88 (labeled 'address').

When an 'RTS' is executed, the number is taken from or placed into the main floating point accumulator, depending on which BASIC POKE was executed. This code section converts data from the 6 byte floating point accumulator format to the BASIC 5-byte format or vice versa. The floating point accumulator has the first byte hold the exponent, the next 4 bytes hold the normalized floating point number, and the last byte hold the sign of the number. It is only bit 7 of the last byte that indicates the sign of the number, 1 for negative and 0 for positive. In the normal BASIC format, a floating point number is only 5 bytes long. The first byte holds the exponent and the remaining 4 bytes hold the normalized number. Since a normalized number always starts with 1, this bit is assumed and is used to store the sign of the number (bit 7 of byte 2 holds the sign). After data is stored or retrieved, the program returns to BASIC.

Multiple arrays can easily be implemented. For example, if you need six arrays each having 1000 elements, let array#1 have index numbers 0-999, array#2 have index numbers 1000-1999, etc., and the index number will choose the desired array for you.

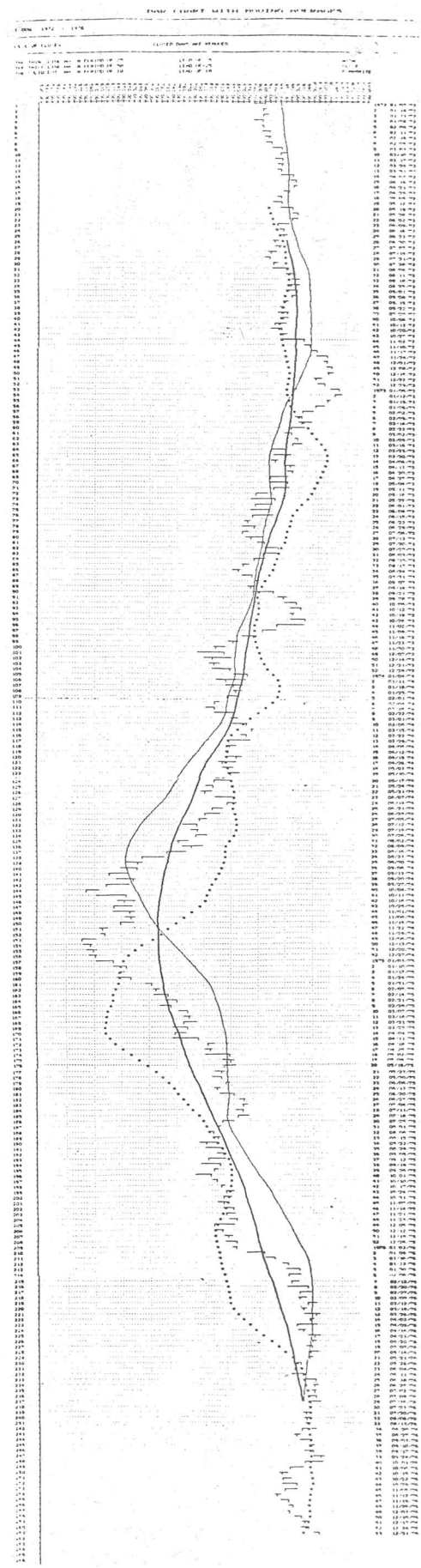
USING THE ROUTINE WITH PETSPEED:

The routine is easy to use with version 2.7 (or later) of the **Petspeed** compiler by Oxford Computer Systems. This compiler produces extremely fast object code and has an 8K run time module which leaves only 24K for source code. Since this can be quite critical, the routine can come to the rescue. To modify the routine for **Petspeed** you need to make 3 changes. Run the reports program on the **PetSpeed** diskette to get the address of in%. Now change the STARTOFVAR label to reflect this address - line number 180. Next, change lines 820 and 860 from 'indirect indexed' addressing to 'absolute indexed' addressing by removing the parentheses from STARTOFVAR. Reassemble and the program will work correctly.

ADAPTING THE ROUTINE FOR THE 8096:

I see no reason why this routine cannot be modified to use the 64K RAM boards for the 8032. The user would have to determine how many floating point numbers can be stored in each bank for the division routine in the x5 subroutine (e.g., if you bank in 8K at a time, you could store 1638 numbers per bank and would divide by 1638 instead of 819). The multiplication table should also be changed to represent the correct number of banks, and the correct offset should be added to reflect the bank address (SuperPET banks everything in at $9000).

```
100 rem*****************************************
110 rem**** trivial example / allan ackerman  ****
120 rem**** commodore basic 4.0 / superpet    ****
130 rem**** program stores then retrieves data****
140 rem*****************************************
150 rem---0 is smallest index and 13103 is largest index---
160 rem---warning: no error check is made, program assumes in% is valid---
170 in%=in%+1          :rem---in% first basic variable defined---
180 on (in%) goto190,200
190 dload"ramdisk.exe":rem---load machine code in the first cassette buffer---
200 poke 0,76          :rem---make sure location 0 has 'jmp' instruction---
210 poke 2,2           :rem---machine code resides in page 2---
220 :
230 rem---store 13104 floating point numbers---
240 :
250 print"storing 13104 floating point numbers - please wait "
260 poke 1,122:rem---set for put---
270 for i=0 to 13103
280     in%=i          :rem---set index---
290     i=usr(i)       :rem---put data in auxiliary ram---
300 next i
310 :
320 rem---recall the data---
330 :
340 poke 1,156         :rem---set for get---
350 for i=0 to 13103
360     in%=i          :rem---set index---
370     x=usr(x)       :rem---get data from auxiliary ram---
380     print x;
390 next i
```



BAR CHART WITH MOVING AVERAGES, reduced from 5 page original covering 266 days of data, all held in memory at once.

```
]
0010; ****************************************************
0020; ****  Ram disk - Commodore basic 4.0 - SuperPet   ****
0030; ****  Allan Ackerman          phone 702-451-4164  ****
0040; ****  in% must be first variable defined in basic ****
0050; ****  and holds the index of the desired element. ****
0060; ****  set locations 1,2 for put or get and then   ****
0070; ****  execute the desired function by x=usr(x)    ****
0080; ****  x holds data to be stored or to be retrieved****
0090; ****************************************************
0100            .os
0110            .ba $027a               ;store in first cassette
0120;
0130; address and index are stored in rnd() workspace in zero page
0140;
0150address     .de $88                 ;holds location in auxiliary ram
0160index       .de $8a                 ;holds index of desired data
0170fpa         .de $5e                 ;main floating point accumulator
0180startofvar  .de $2a                 ;start of variables in basic
0190bankselect  .de $effc               ;bank select latch
0200;
0210; subroutine 'put'  stores data in auxiliary ram
0220; In basic execute poke 1,122:poke 2,2, then set record number by
0230; assigning in%, finally x=usr(x) will store the data in ram
0240;
0250put         jsr x5                  ;find address of indexed data
0260            ldy #0
0270            lda *fpa                ;get first byte (exponent)
0280            sta (address),y         ;store first byte
0290            iny
0300;
0310; the sign bit must replace the 1 at bit 7 of the 2nd byte in fpa
0320;
0330            lda *fpa+5              ;this is sign byte (bit 7)
0340            ora #127                ;accumulator = s1111111
0350            and *fpa+1              ;set bit 7 to indicate sign
0360            sta (address),y         ;store second byte
0370            iny
0380            lda *fpa+2              ;store the remaining three bytes
0390            sta (address),y
0400            iny
0410            lda *fpa+3
0420            sta (address),y
0430            iny
0440            lda *fpa+4
0450            sta (address),y
0460            rts
0470;
0480; subroutine 'get' retrieves data from auxiliary ram
0490; poke 1,156, poke 2,2 and in% must be set to the record number
0500; before the call - then x=usr(x) will retrieve the data in x
0510;
0520get         jsr x5                  ;find address of indexed data
0530            ldy #0
0540            lda (address),y         ;store six bytes in fpa
0550            sta *fpa                ;store exponent
0560            iny

0570            lda (address),y
0580            sta *fpa+5              ;store sign byte
0590            ora #128                ;bit 7 always 1
0600            sta *fpa+1              ;store 2nd byte
0610            iny
0620            lda (address),y         ;store remaining 3 bytes as is
0630            sta *fpa+2
0640            iny
0650            lda (address),y
0660            sta *fpa+3
0670            iny
0680            lda (address),y
0690            sta *fpa+4
0700            rts
0710;
0720; subroutine x5 (times five)
0730; (note: A maximum of 819 five byte floating point numbers can)
0740; (be store in 4k of ram with one byte being wasted.)
0750;
0760; select bank and figure out new index in desired bank
0770; bank=int(in%/819) / note: in% holds index in basic
0780; new index=in%-bank*819
0790; multipy new index by five to find address in auxiliary ram
0800;
0810x5          ldy #3                  ;store index in two locations
0820            lda (startofvar),y      ;in zero page
0830            sta *index              ;store low byte of in%
0840            sta *address
0850            dey
0860            lda (startofvar),y
0870            sta *index+1            ;store high byte of in%
0880            sta *address+1
0890;
0900; divide index by 819  note: 819=$333
0910;
0920            ldy #0
0930loop        sec
0940            lda *address
0950            sbc #$33
0960            sta *address
0970            lda *address+1
0980            sbc #$03
0990            sta *address+1
1000            bmi strbank             ;y now contains int(in%/819)
1010            iny
1020            bne loop                ;unconditional - y is never zero
1030;
1040; select bank and figure out new index
1050;
1060strbank      tya
1070            sta bankselect
1080            asl a                   ;double index for table lookup
1090            tay
1100            sec
1110            lda *index
1120            sbc table,y             ;look up the quantity (bank*819)
1130            sta *index              ;new index is stored in 2 places
1140            sta *address            ;new index=index-bank*819
1150            lda *index+1
1160            sbc table+1,y
1170            sta *index+1            ;index and address now hold the
1180            sta *address+1          ;new index
1190;
1200; multiply new index by five
1210;
1220            asl *address            ;multiply by five by executing
1230            rol *address+1          ;two left shifts followed by
1240            asl *address            ;an add.
1250            rol *address+1
1260            clc
1270            lda *index
1280            adc *address
1290            sta *address
1300            lda *index+1
1310            adc *address+1
1320            adc #$90                ;offset index by $9000
1330            sta *address+1          ;address now holds the location
1340            rts                     ;of data in auxiliary ram
1350;
1360; table holds the products, bank*819, where bank=0,1,...,15
1370;
1380table       .by $00 $00 $33 $03 $66 $06 $99 $09 $cc $0c $ff $0f
1390            .by $32 $13 $65 $16 $98 $19 $cb $1c $fe $1f $31 $23
1400            .by $64 $26 $97 $29 $ca $2c $fd $2f
1410            .en
```

Feature Article:
SOFTWARE

SHOPPING TIPS FOR COMPUTERISTS

by Jim Strasma

WHERE TO LOOK FOR GOOD SOFTWARE:

Where can you buy good software? I look at four possible resources. My favorite place to shop for computer programs is at **a nearby full-line Commodore dealership.** Such stores may be familiar with the programs they sell, able to help you choose an appropriate package, and able to train you in its use. They will also usually let you try it out in the store before you buy, and perhaps even in your own home or office. This is a huge advantage, and can save you from many foolish purchases. On the other hand, local dealers have to pay and charge more for their programs than other sources, selection is sometimes limited, and such dealerships are very scarce in many areas.

Another local software source is **a discount store** that sells Commodore products. Most discount stores feature low prices and a cheerful refund on any purchase you don't like, as long as you return it within about ten days. The disadvantage of a local discounter is that there is rarely any way to try a product before you buy it, and you'll be lucky to find a clerk at all, let alone one who knows anything about computers.

A third alternative, and the first one open to many people in remote areas, is **a mail order dealer.** Typically, mail order houses feature low prices, home delivery (but check the cost), and convenient ordering by phone, often toll-free. They may also be the first to get the latest programs and updates, due to their large sales volumes. The worst thing about mail order is the wait for the package to arrive. At best, it will be a couple of days; at worst it can take three months or more. Unfortunately, some mail order houses may mislead you about what's in stock. It's also possible you'll be sent the wrong product, accidentally or on purpose. At best, this adds another delay to the process; at worst, you'll discover Master Card and Visa are not on your side in such disputes, and will insist on being paid for any such purchases from an out-of-state supplier unless the supplier is within 100 miles of your home. Good mail order vendors may have people trained to help you use the programs, and the best even offer refunds if you are unsatisfied with your purchase. The worst may take your money and run. I often go by the rule: if the deal sounds too good to be true, it probably is. Others bend the truth heavily in touting their products, and hide their profits in such hidden extras as large shipping fees.

One more alternative is to **buy directly from the company that developed the program.** No one will know more about it, and you'll always get the latest version. Unfortunately, many software companies no longer sell directly to consumers (some don't even sell directly to dealers!) and if they do sell direct, nearly all charge the full list price, to avoid competing with their dealers. They will also have fewer selections than most dealers, and are unlikely to steer you to a competing product. Shipping delays and refund policies will vary, as with other mail order sources.

HOW RECOGNIZE GOOD SOFTWARE SOURCES:

How can you recognize the good software sources from the bad ones then? Here are a few helpful questions:

1) How long have they been in business? The mail order house I use has been in business continuously since about 1979. The only way a mail order company stays in business that long is by doing something right.

2) What is their background in computers? Some are skilled hobbyists themselves, perhaps with a degree in computer science; others were selling washing machines last year, and will be selling stereos by mid-winter.

3) If ordering by mail, will the company ship C.O.D.? This adds a bit to your cost, but guarantees you won't pay for a product until you receive it.

4) One other way to keep up is through user group meetings and review magazines, such as the Midnite. (Sample copies are available from P.O. Box 1747, Champaign IL 61820 USA.) Fellow users with good and bad experiences with a particular dealer or mail order house will be glad to tell you about it, and can save you many headaches.

WORD PROCESSOR COMPARISON CHART

by Mindy Skelton

	EASY SCRIPT(1)	WORD MANAGER	WORD PRO 3+	HESwriter(2)	SUPER-TEXT
Medium	Disk	Disk or Tape	Disk	Cartridge	Disk
Editing Features : Headers/Footers	yes	no	yes	no	yes
Search and Replace	yes	yes	yes	no	yes
File Merge	yes	no	yes	no	yes
Printer Codes sent from within program	yes	no	yes	yes	yes
Block move/copy	yes	yes	yes	yes	yes
Pre-viewing Option	yes	yes	no	yes	yes
Number of Columns	40(3)	80(4)	40	40	40/80
Formatting Features :		(5)			
Tabs	yes	yes	yes	no	yes
Centering	yes	yes	yes	yes	yes
Right Justification	yes	no	yes	yes	yes
Margin Setting	yes	no	yes	yes	yes
Page Length	yes	no	yes	yes	yes
Line Spacing	yes	no	yes	yes	yes
Price	($35-$40)	($120 including Data20 Board)	($75-$90)	($30-$40)	(around $65)

	PAPER CLIP	SCRIPT 64	MIRAGE CONCEPTS	SPEEDSCRIPT	QUICK BROWN FOX(6)
Medium	Disk	Disk	Disk	Disk or Tape	Cartridge
Editing Features : Headers/Footers	yes	yes	yes	yes	yes
Search and Replace	yes	yes	yes	no	yes
File Merge	yes	no	yes	no	yes
Printer Codes sent from within program	yes	yes	yes	yes	yes
Block move/copy	yes	yes	yes	no	yes
Pre-viewing Option	yes	yes	no	no	yes
Number of Columns	40	80	40/80	40	34
Formatting Features :					
Tabs	yes	yes	yes	no	yes
Centering	yes	yes	yes	yes	yes
Right Justification	yes	no	yes	yes	yes
Margin Setting	yes	yes	yes	yes	yes
Page Length	yes	yes	yes	yes	yes
Line Spacing	yes	yes	yes	yes	yes
Price	($85-$125)	(around $100)	(around $100)	(free-in Compute!'s Gazette)	($50-$60)

(1) A BEST BUY (2) NOT RECOMMENDED (3)UP TO 240 COLUMNS VISIBLE WITH HORIZONTAL SCROLLING
(4) REQUIRES THE ADDITION OF A DATA20 80 COLUMN BOARD (5) ALL FORMATTING COMMANDS MUST BE PRE-SET. (6) NOT RECOMMENDED

For the Commodore 64

PUT YOUR MESSAGES HERE IN MINUTES

Reduction of an actual sign

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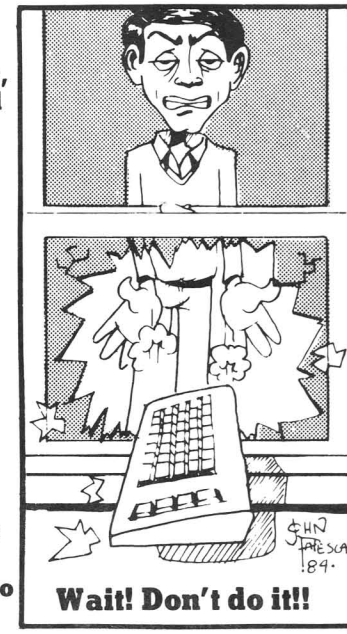

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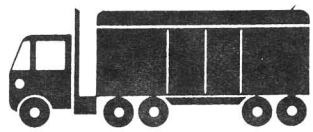

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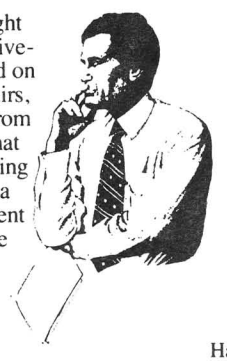

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Resources

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